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Forecast 2011

SPECIAL REPORT

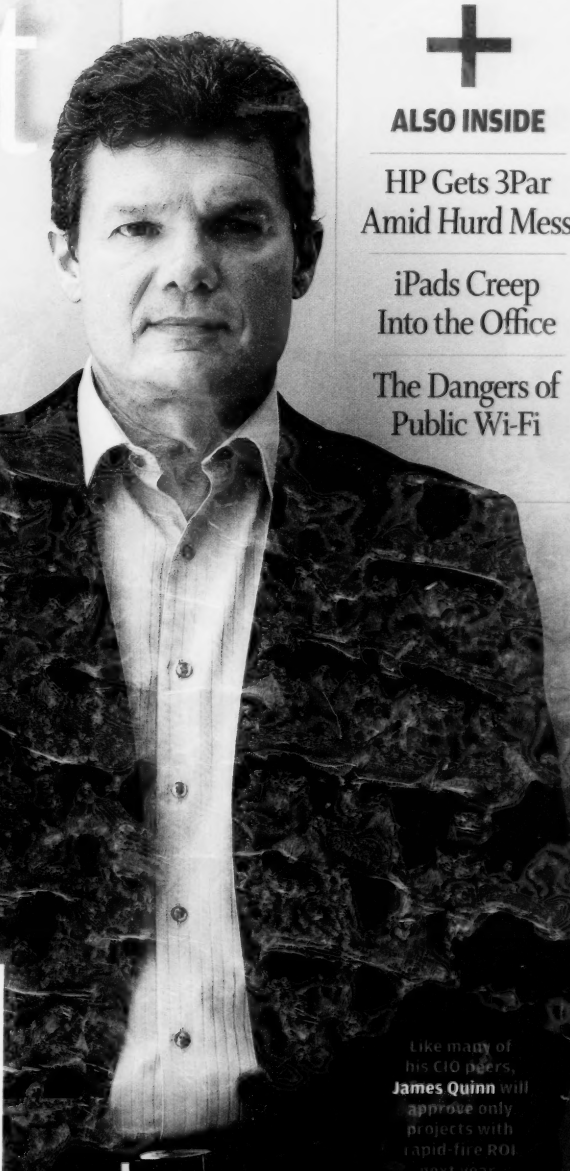
As IT leaders look ahead to 2011, they're figuring out how to cope with **tight budgets,** the advent of **cloud computing** and an influx of **consumer technologies.**

ALSO INSIDE

HP Gets 3Par Amid Hurd Mess

iPads Creep Into the Office

The Dangers of Public Wi-Fi



Like many of his CIO peers, **James Quinn** will approve only projects with rapid-fire ROI next year.

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SPECIAL REPORT

Forecast 2011

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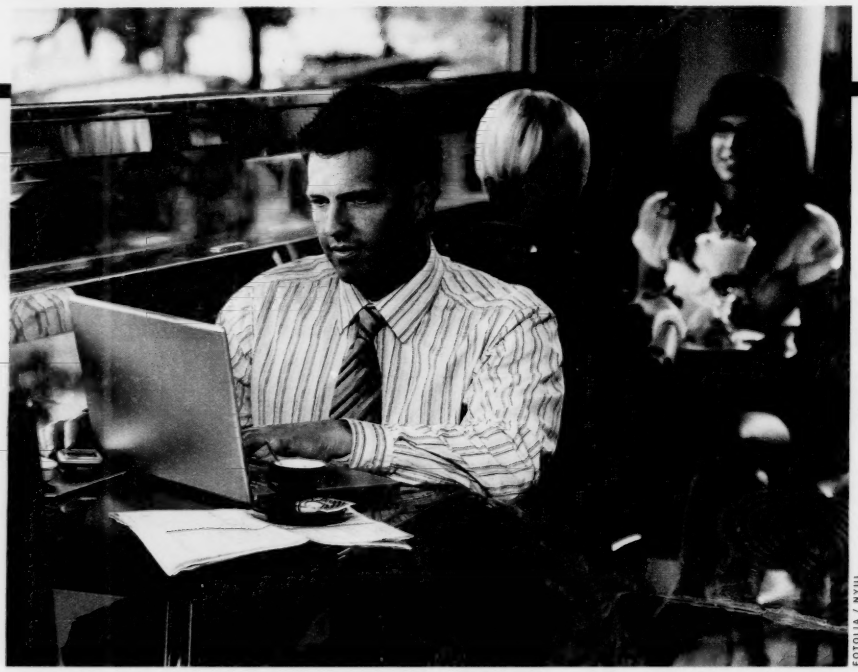
Fresh Insights
New Trends
Great Ideas

HeadsUp



FOTOLIA / NYUL

WIRELESS SECURITY

Help Employees Avoid Hot-Spot Hazards

EMPLOYEES ARE EXPOSING personal and professional information unknowingly as they log onto public Wi-Fi hot spots at hotels, airports and coffee shops, experts say.

Ryan Crum, former director of information security at PricewaterhouseCoopers Advisory Services, said he has observed unprotected Social Security numbers, corporate financial data and information about mergers and acquisitions circulating on public Wi-Fi networks, particularly in e-mails.

Security experts recommend that IT managers take the following steps to protect corporate data from hot-spot dangers:

- Establish and enforce strong authentication policies for devices trying to access corporate networks.
- Require employees to use a corporate VPN and encryption when making connections and exchanging data. Better still, set up computers and other mobile devices so that they automatically connect to the VPN and encrypt data — after it has been determined that the device hasn't been lost or stolen.
- Make sure all devices and software applications are configured properly and have the latest patches.
- Ensure that corporate security policies prohibit people from transferring sensitive data to mobile devices or unauthorized computers.
- Provide workers with broadband air cards, which require a service plan, so employees don't have to use public hot spots for wireless connections.

– Mary K. Pratt, contributing writer

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RESEARCH RECAP

Report Warns Of Windows 7 Labor Shortfall

It's not a Y2K-style crisis, but there's only a four-year window until Microsoft Corp. ends support for Windows XP. The need to migrate from XP to Windows 7 "will create an extra budgetary and resource burden on companies from 2011 to 2012," according to recent report by Gartner Inc.

The research firm estimates that large and midsize organizations worldwide will migrate about 250 million PCs to Windows 7 over the next few years.

Gartner predicted that demand for IT staffers qualified to handle Windows 7 migrations will exceed the supply during that time frame, leading to higher IT labor costs.

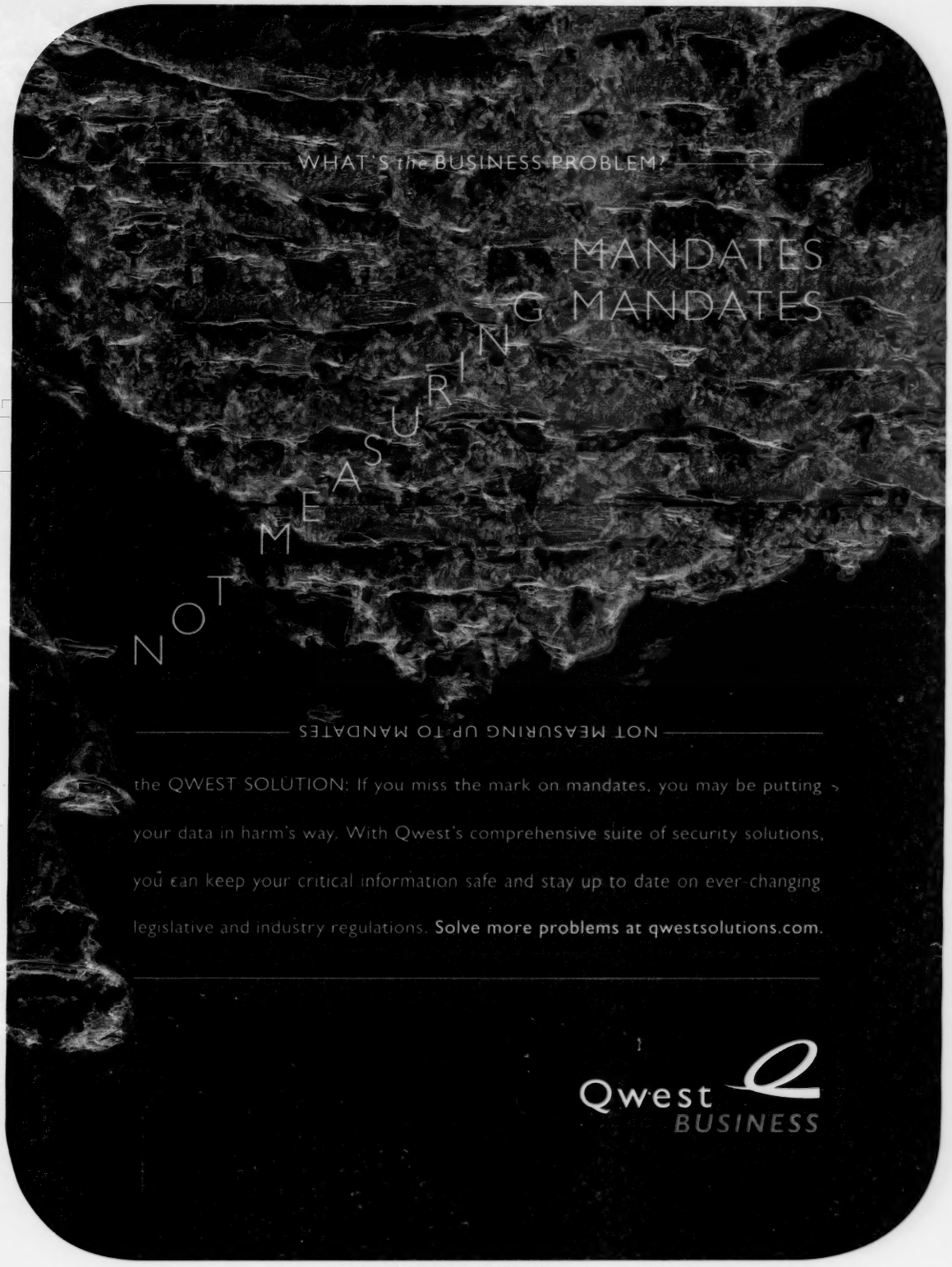
Gartner analyst Steve Kleynhans said IT shops should line up Windows 7 contractors early.

"Begin talks with suppliers now about putting in place contracts that can deliver flexible levels of resources at a fixed rate," he advised.

The report said IT shops have three migration options: accelerate the replacement of desktop PCs with Windows 7 machines, upgrade the operating systems on existing machines, or move some workers to hosted virtual desktops.

"Most organizations will need to find extra funds or redirect budgets away from other projects to complete the Windows migration on time," the Gartner report concluded.

– MITCH BETTS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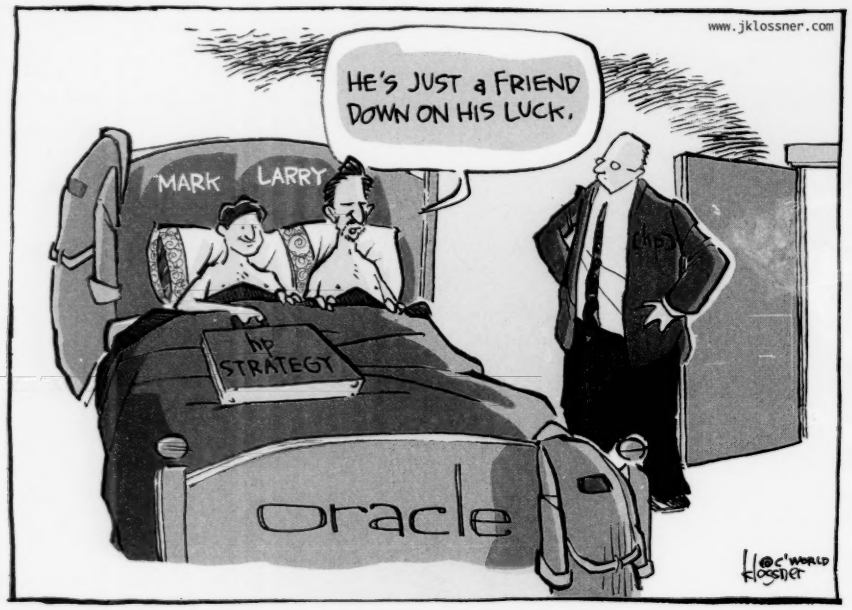
BETWEEN THE LINES
By John Klossner



DATA CENTERS

Purdue App Slows Chips to Reduce Heat

CHIP MAKERS continue to build increasingly powerful processors, but one customer has found it useful to slow the chips down when the data center's cooling system falters.

Patrick Finnegan, a systems administrator at Purdue University, has developed software that throttles the clock speed of server processors to reduce the heat they produce.

"Previously, our only options were to put in a few large fans and hope that was enough, or start turning servers off," said Mike Shuey, who oversees Purdue's supercomputers. "This software gives us a middle ground that gets us by many outages."

The Purdue data center runs about 15,000 processors, mostly for two supercomputer clusters. Slowing down the chips "may lose 70% to 80% performance, but we get a 30% power savings," Shuey said.

Normally, commodity servers automatically shut down when they're on the verge of overheating, or administrators turn them off before they reach that point. But in the world of academic supercomputing, such restarts are a big problem.

Purdue's clusters run many serial jobs that can take days, weeks or even months to complete. And while some programs have frequent setpoints to which they can return, many do not. "If our only recourse to survive an outage is to start turning off machines, we can throw away 2 [million] to 3 million CPU hours of work," Shuey said. "It can take weeks and weeks of runtime just to get back to the state we were in the minute before we turned things off."

In contrast, by throttling back the servers, the programs are slowed, but no work is lost.

Since Finnegan wrote the software earlier this year, the school has used it twice. "The compute jobs slowed down, but the data center temperatures dropped," Shuey said.

Purdue is selling the software for $250 at FolioDirect.net, an IT market for universities.

– Joab Jackson, IDG News Service

Micro Burst

Rustock, the biggest spam-sending botnet, was responsible for

41%

of all spam messages sent worldwide last month.

FUTURE WATCH

RFID Signals Travel Farther in Air Ducts

Researchers have discovered that ventilation ducts at least triple the distance that radio waves from passive RFID tags can travel inside a building.

The discovery could lead to a new breed of building sensors that use RFID tags to wirelessly transmit data to central monitoring systems without the expense of running wires throughout a building, according to a statement by North Carolina State University.

The wireless sensors could replace today's climate-control systems that use wired thermostats. In addition, the development opens the door to RFID-based smoke detectors, carbon monoxide monitors, or sensors that detect chemical, biological or radiological agents, according to Dan Stancil, head of the university's Department of Electrical and Computer Engineering.

Stancil's research team found that air ducts act as electromagnetic waveguides that boost the communication range of UHF (ultrahigh frequency) radio frequency identification tags. The tags emitted a radio signal that could be picked up by an RFID reader at the opposite end of a 30-meter piece of ductwork; the typical range of an RFID signal over open space is 5 to 10 meters.

– MATT HAMBLEN

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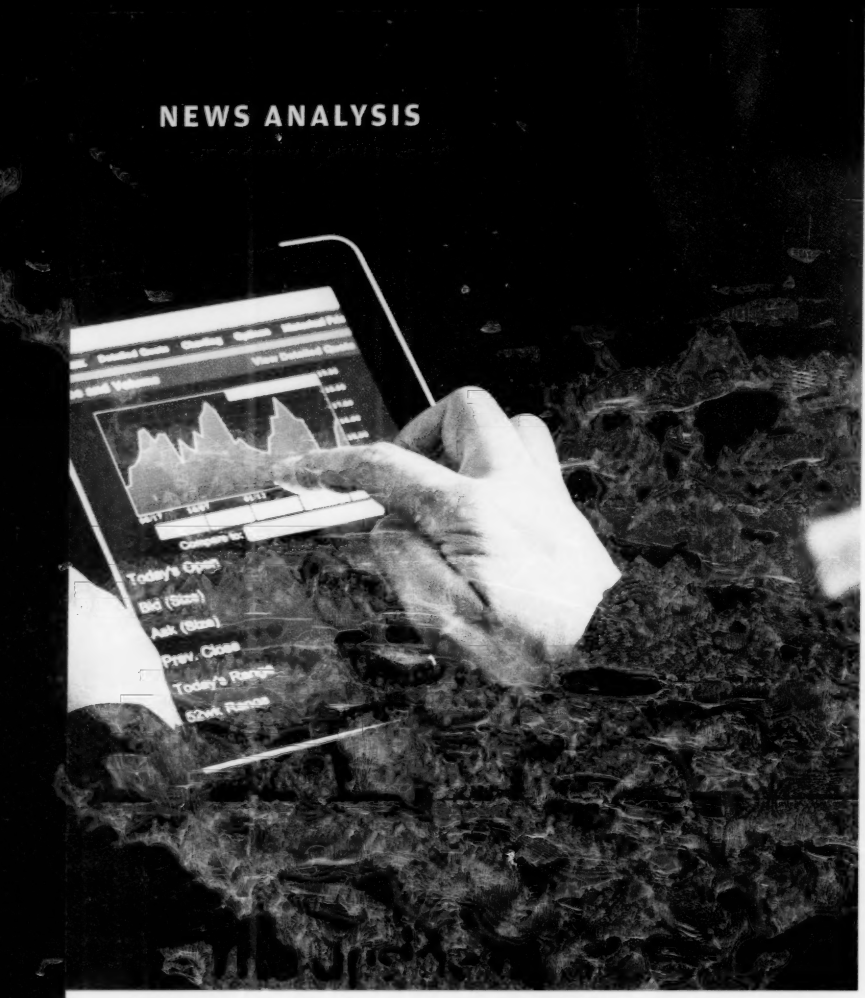

iPad Creeping Into Business Offices

Analysts say the popular Apple tablet needs more business apps, but early adopters are finding ways to use it at work. **By Matt Hamblen**

APPLE INC.'S iPad tablet computer, hugely popular among consumers since its April debut, is slowly finding its way into the hands of doctors, lawyers and other businesspeople who say it can help them do their jobs.

For example, the IT shop at Sonnenschein Nath & Rosenthal LLP gave the Chicago-based law firm's attorneys permission to use iPads — as long as they're willing to pay for the devices themselves. About 100 of the 800 attorneys are using them.

"The iPad has real value for attorneys servicing our clients, of being able to access corporate data and document libraries immediately and [doing so] a lot quicker than on a laptop," said Michael Barnas, the firm's director of application services.

> "Until we get access to **corporate applications**, employees will still have to lug around their laptops.
>
> **TED SCHADLER**, ANALYST, FORRESTER RESEARCH INC.

IT managers have approved the iPad's security and management functions, and the firm is providing limited support to road warriors who have problems logging in, authenticating or using Citrix Receiver middleware on the device. But Barnas added that IT personnel can't yet provide full remote iPad support.

Attorneys with iPads still use laptops as well, because they need to write long documents that are subject to many revisions — a nearly impossible task on Apple's tablet today, Barnas added.

At Dartmouth-Hitchcock Medical Center in Lebanon, N.H., cardiologist Jon Wahrenberger said he and four colleagues use iPads to access electronic health records and to take notes while examining patients. He said the device's "low profile" makes it less intimidating to patients during exams than a laptop might be.

Wahrenberger said the medical center recently installed a Microsoft Exchange server that includes extensions to the iPad. "There's huge excitement for this stuff," he said.

Still, the iPad needs to add far more business-friendly capabilities before it can become a corporate staple, contended Ted Schadler, an analyst at Forrester Research Inc.

Most important, he said, is the need for applications that can be used to create and edit common documents across multiple computer platforms. "Until we get access to corporate applications, employees will still have to lug around their laptops," Schadler said.

He did note that the iPad has the "same security model and administrative model as [the one Apple built into] the iPhone, so they've done due diligence on that already."

Schadler also cited three practical uses of the iPad for businesses today.

First, he said, salespeople can use the device to scroll through slides or demonstrate a Web site; second, executives on short trips can use it to access e-mail, calendars or Keynote slides; and finally, doctors, retail sales staffers, warehouse workers and others can use iPad devices to access to applications while on their feet. ◆

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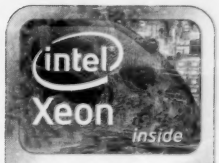

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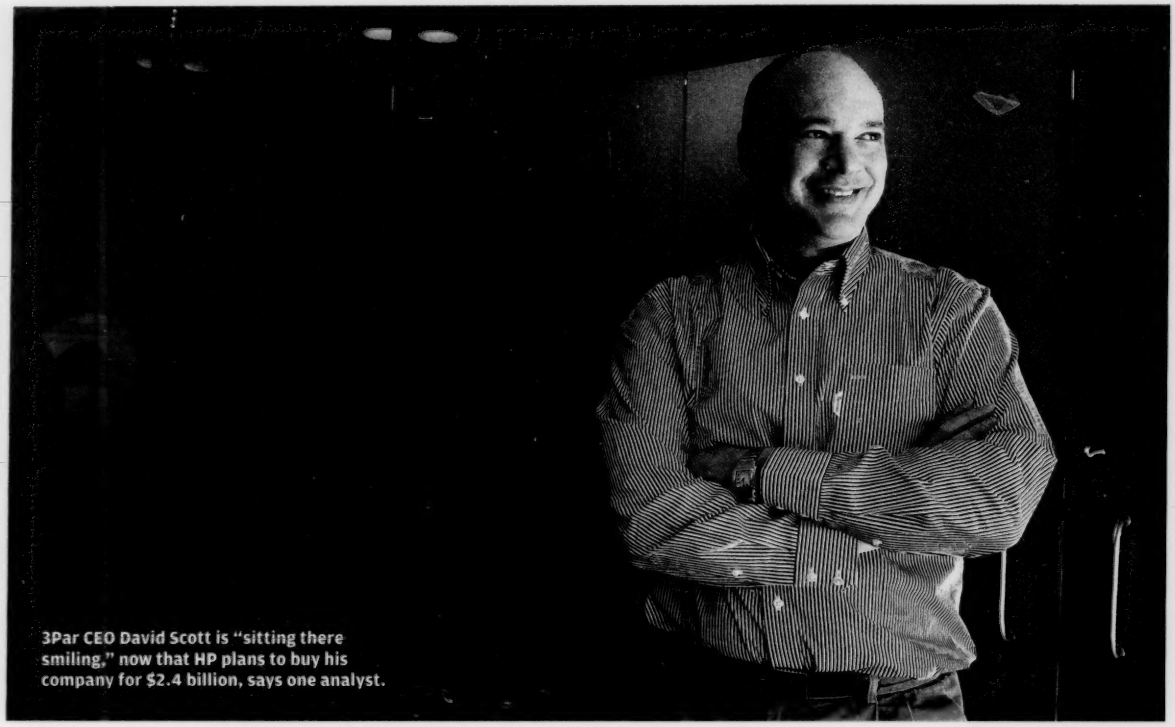
[1] Based on 3-party benchmark result SPEC CPUC006 comparing previous generation system with Intel Xeon 5470 (Harpertown) 3.33GHz processors to new generation System x3690 X5 with Intel Xeon X7560 processors. [2] Return on investment and power savings calculation based on 33:1 consolidation ratio scenario of 200 Intel 2-socket servers to 6 IBM x3690 X5 servers and savings in energy costs, software license fees and other operating costs. Actual costs and savings will vary depending on individual customer configurations and environment. [3] Based on one IBM x3690 X5 with MAX5 memory expansion (2 processors, 64 DIMMs) as compared to an industry-standard 2-processor, 16 DIMM systems and license cost per processor. [4] Prices are current as of 3-31-10 and are subject to change without notice. Manufacturer's suggested retail price; dealer prices may vary. Minimum transaction size $5,000; monthly payments are estimates based on lease rates for installations of qualified products and services in the United States. Actual rates may vary based on your creditworthiness, configuration details, etc., and are subject to credit approval by IBM Credit LLC. For some clients, total software and services is limited to 75% of hardware financed. Other conditions may apply, so please contact your IBM Authorized Business Partner or IBM representative for more information. IBM, the IBM logo, ibm.com, Smarter Planet and the planet icon are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. © International Business Machines Corporation 2010



3Par CEO David Scott is "sitting there smiling," now that HP plans to buy his company for $2.4 billion, says one analyst.

HP Gets 3Par Amid Hurd Mess

Analysts expect 3Par's grid storage technology to become a key part of the HP Enterprise Services product portfolio. By Lucas Mearian

HEWLETT-PACKARD CO. didn't allow the chaos surrounding the unseemly Aug. 6 departure of former CEO Mark Hurd blunt its pursuit of grid storage maker 3Par Inc.

After winning a weeks-long bidding war with Dell Inc. early this month, HP walked away with the Fremont, Calif.-based storage vendor for about $2.4 billion in cash. HP had thrice topped bids from Dell, whose final offer was $2 billion.

Analyst John Bender, who once ran HP's mergers and acquisitions group and oversaw the massive 2002 HP-Compaq merger, called the move to buy 3Par a good one for his former employer.

The deal lets HP control its storage technology — it currently resells high-end arrays from Hitachi Data Systems Corp. — while strategically keeping 3Par's well-regarded offerings out of the hands of rivals like Dell and Acer Inc., said Bender, who's now managing director of Bender Consulting.

And just as important, he added, HP needed a win after the contentious departure of Hurd, who resigned about a month ago in the face of a sexual harassment claim that led to the disclosure of some inaccurate expense reports. (Hurd was hired last week as co-president of Oracle Corp., and HP immediately filed a lawsuit charging that its former CEO had violated his severance agreement.)

Bender expects HP's Enterprise Services unit, formerly EDS, to aggressively sell 3Par products.

"There will be a strong link to EDS. Whether it's just from a professional services perspective to set it up for customers or a fully embedded business unit, time will tell," he said.

The big winner of the bidding war is 3Par, according to Arun Taneja, a consultant at Taneja Group, who said 3Par's CEO, David Scott, "is sitting there smiling, as is his staff and shareholders."

As for Dell, acquiring 3Par would have been a critical part of its plan to become a provider of a full line of data center products and services, according to analysts. The addition of 3Par's technology would have allowed Dell Services to add strong cloud offerings to its product catalog, they said.

However, "Dell has a major problem right now," Bender contended. "They have to consider whether or not they should take the money they would have spent on 3Par and develop those capabilities internally." ◆

Computerworld *reporter* **Patrick Thibodeau** *contributed to this story.*

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THE Grill

John Burke

In the volatile energy market, in-house development helps this CIO control his firm's destiny.

Most interesting thing people don't know about you:
I was a musician until the age of 25.

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Best book you've read recently:
Good to Great, by Jim Collins

WHEN AMBIT ENERGY *launched in 2006, CIO and co-founder John Burke was faced with the task of supporting the IT needs of a start-up that had aggressive growth plans in an extremely competitive deregulated energy market. But instead of turning to software vendors and outside consultants to help build out Ambit's IT infrastructure, Burke decided to do everything in-house. It's an approach that he says has helped Ambit's 55-person IT organization more efficiently enable and support the company's frenetic growth. At a time when many companies are outsourcing IT operations to cut costs, Burke insists that keeping Ambit's IT entirely in-house has yielded far better ROI.*

What does Ambit do as a player in the deregulated energy market? Ambit is an energy provider largely to residential customers. We really own and manage the customer. We sell the customer, and they enroll through our systems. We then receive meter reads through

Continued on page 14

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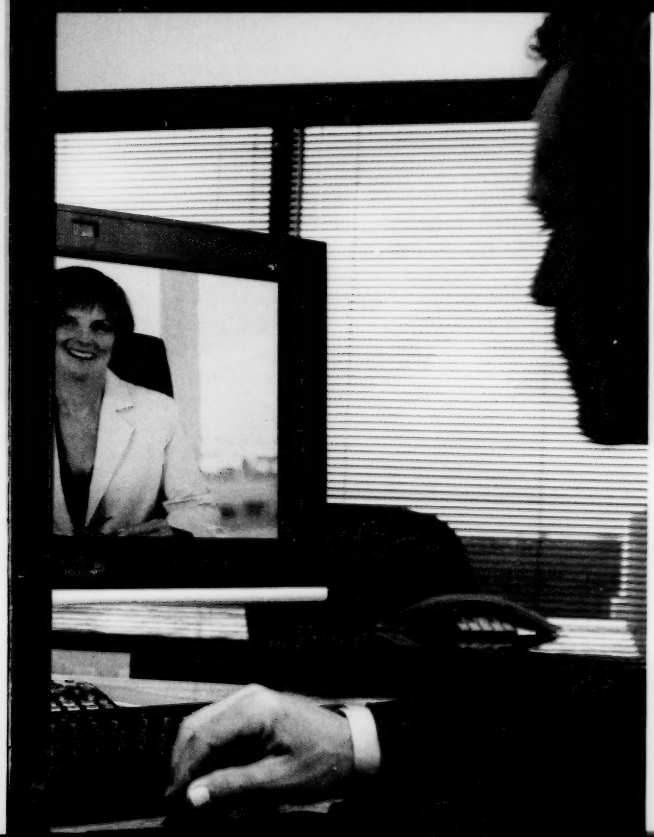
Did someone say, ROI?



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the regulated transmission distribution providers every month through EDI and other electronic means. We then rate it, generate a bill, print it, mail it out, and then we expect the customer to pay. If the customer doesn't pay on time, there are oversight committees in the states we operate in that govern [when] you can go in and turn the electricity off. So, in a worst-case scenario, we accidentally turn off someone's power or we bill them incorrectly, and it can become a very spicy issue. So we've had to focus a lot of energy upfront on making sure that our systems are really rock-solid so that those sorts of issues don't happen.

> **Our systems are better than anything we can buy, period.**

What drove your decision to do all of your software development in-house? We started the company in 2006, and I was intending on just going out and licensing a system. I had no interest in building one. [But] there weren't really a lot of players in the deregulated energy space. I finally settled on one. My first request was for a simple rating methodology, and the vendor told me it would take two weeks to define it and two months to build. And I just about had a heart attack. So I grabbed two contractors, and we started writing software. We wrote the rating engine first, then designed the data models. Because of the lessons I learned from my previous experience in telecom, I put a hard regimen in place from the beginning about how we develop and design. We measure twice and cut once.

Now that it's all built out, wouldn't it be easier to have someone else manage it? Our systems are better than anything we can buy, period. If you go look in the industry at what we are doing relative to what other people are doing, no one has got what we have. As a matter of fact, we've had companies come to us asking us to license our [back-office system]. So we consider it a competitive advantage. I don't know anyone out there that even comes close to what we can do for rate of return.

You moved from a waterfall software development methodology to one based on agile processes. Why? With the waterfall methodology, what we would do is write these really robust specs initially and then work with the business to refine them. Then we would go and write software for a couple of months. And when you got to the end, the business owners would look at what's coming out of the door and say, "Wait a minute. Since the last time we talked, we really rethought some of this, and now we want you to do this instead of that." It creates this animosity where IT blames business because they didn't know all the specs upfront, and the business blames IT because the meeting wasn't organized well, etc. If you are lucky, you have a visionary genius who defines everything upfront, and then you are safe.

So, how does it work with agile? With agile, we are using scrum, where you do these sprints, which are these one-to-two-week runs. At the beginning, the business prioritizes what they want to see. Then you do a sprint, and everyone looks at it after two weeks. During that time, the business may reprioritize what they want. They may come up with new definitions. But all the work that was completed during that time is value-add toward the end [product]. There is a psychological impact when the business is empowered and more involved in the development process and they are giving real feedback. And then there's the same psychological process with the IT guys. They feel they have a closer connection with the business. They are able to show them things quicker and give the business more immediate feedback.

What would your advice be to companies that want to implement agile but don't have the advantage you did of being at a start-up? I was lucky. I have the ability to actually implement great ideas, and that is a real blessing. I've had previous roles where I've gone in as a virtual CIO at organizations and tried to change them, and it is incredibly hard to do.

I don't think you should look at it at a textbook level, however. You should take a moment to try to change your thinking. It was a change for me. I like doing what works, and I had a lot of success with waterfall. So I had to really open my mind and listen. You have to live in the unknown for a while and get your head around what these guys are talking about. And, of course, as with any situation, don't listen to the marketing. Don't swallow the buzzwords. Try to look at what the underlying principles are. You may not be able to adopt all aspects of it because of the organization, but you are going to have some control over some aspects.

– *Interview by* **Jaikumar Vijayan**

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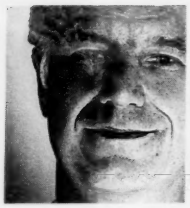


OPINION

BART PERKINS

Social Media to the Rescue

Social media offers organizations like the Red Cross a cheaper, easier means of responding to an emergency.

SOCIAL NETWORKS such as Facebook and Twitter link people around the globe. But until recently, they have been oriented toward leisure activities such as connecting with friends and playing games. Now, social media tools are beginning to support serious endeavors, including crisis response efforts by FEMA, the DHS, and police and fire departments.

In 2008, Egyptian police detained a UC Berkeley graduate student, James Buck, for photographing a protest near Cairo. Buck tweeted "Arrested." His followers notified Berkeley, which obtained his release through the U.S. State Department and local attorneys. In 2009, two young Australian girls trapped in a storm sewer used their phones to update their Facebook status. Friends notified authorities, who rescued the girls. More organized uses of social media during emergencies are in the offing. The American Red Cross recently hosted the Emergency Social Data Summit to discuss capitalizing on social media during emergencies.

Crisis responders are attracted to social media because they are:

Pervasive. Facebook has over 500 million subscribers worldwide, with 1 billion projected by 2013.

Inexpensive. It is nearly always more cost-effective (and quicker) to build systems on an existing platform. Social media apps are relatively easy to develop, allowing relief organizations to spend their time and money meeting victims' needs rather than building complex IT infrastructures.

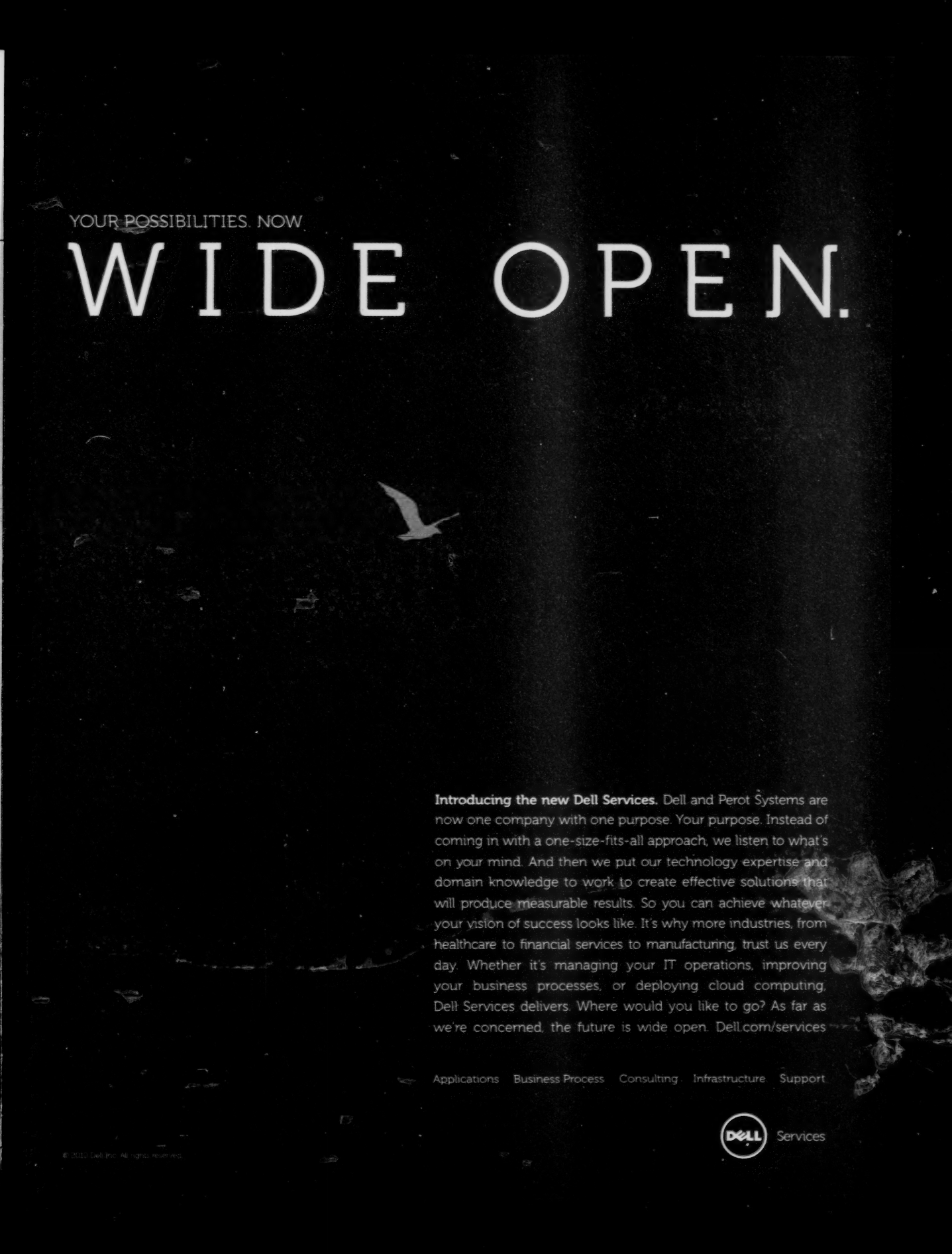
Flexible. Social media platforms were designed to facilitate customization and extension. This allows an app to be repurposed for multiple disasters. The Ushahidi application, developed to track violence in Kenya, was adapted to track volunteers, supplies and shelters following the Haiti earthquake and was also modified for use in the response to the BP oil spill. The Red Cross' "Safe and Well" survivor registration Web site, which was designed to help reconnect friends and families after Hurricane Katrina, was recently updated to include a direct feed to Facebook and Twitter. In addition, people away from their homes during a disaster can visit the American Red Cross Flickr site to see disaster photos and determine whether their neighborhoods sustained damage.

Crisis responders are beginning to augment official information channels with up-to-the-minute data from social media. But privacy concerns abound. In a crisis, reconnecting family members is critically important. But the same data needed for that could potentially be used for harmful purposes, such as robbery or identity theft. Moreover, emergency responders need access to potentially sensitive personal data of the sort that social media services have been criticized for sharing. This raises the question of whether crisis responders should be able to override privacy controls within various social networks.

Finally, emergency responders often obtain information from phone-call-based services such as 9-1-1 emergency systems. A recent Red Cross survey found that people who weren't able to reach emergency operators quickly by dialing 9-1-1 often turned to e-mail or social networks. Unfortunately, few 9-1-1 call centers can accept data from social media; valuable text messages, photos or videos can't be forwarded to responders. That's not good, especially in an emergency.

Social media platforms are maturing and becoming serious communication channels that facilitate problem-solving in creative and unexpected ways at commercial, governmental and not-for-profit organizations. How can your company use them to achieve its goals? ◆

Bart Perkins is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.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Forecast 2011

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IT's Leaner Lifestyle

Meticulous **budgeting and economizing** technologies have helped sculpt **trim new IT outfits.** Here's how IT will maintain its **slimmer shape** in 2011.

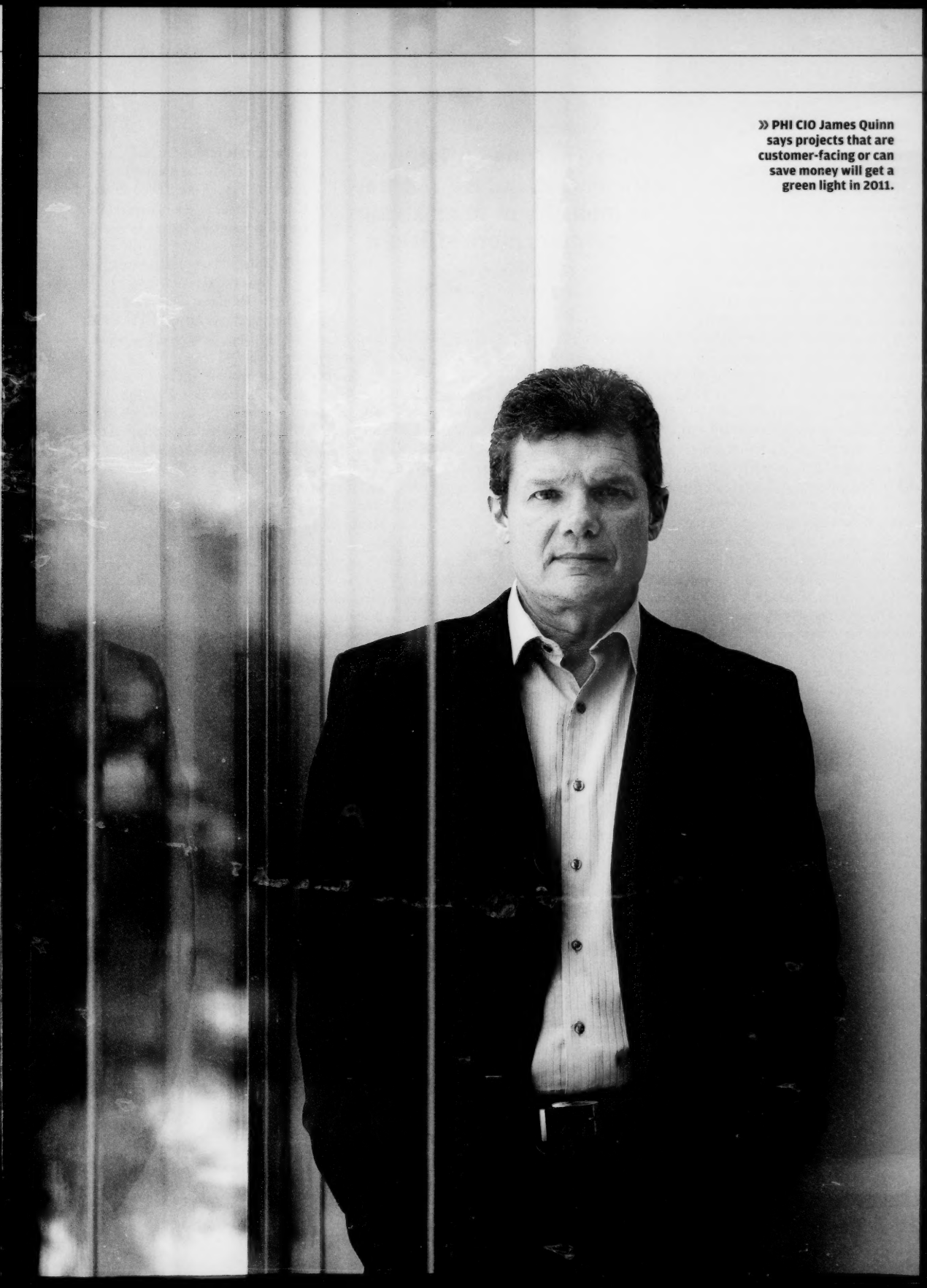
BY JULIA KING

LIKE MANY BUDGET-CONSTRAINED IT executives, PHI Inc. CIO James Quinn will be heading into 2011 with a list of worthy projects that the global helicopter transportation company will nonetheless be deferring — at least for the time being. But there are certain kinds of projects you won't find on that hold list.

Key among them are projects that are "customer-facing or anything that saves dollars," says Quinn. "Anything that involves process improvements and anything that can show a fairly fast ROI is also getting pushed to the front."

On the expense side, PHI will continue to reduce costs by outsourcing "keep the lights on" operations, even farming out the maintenance of production databases. The company is also renegotiating its agreements with just about all of its IT and services

RICK OLIVIER



» PHI CIO James Quinn says projects that are customer-facing or can save money will get a green light in 2011.

providers, including those whose contracts haven't yet expired.

"We're being very aggressive, going back to vendors to work multiyear deals in exchange for cost reductions today," Quinn explains. "We're seeing our customers do that to us, and we're doing the same thing with our vendors."

IT shops in all industries are approaching 2011 the same way Quinn is: They plan to vigilantly manage flat budgets and further slash already significantly reduced costs. Indeed, IT executives who responded to *Computerworld*'s 2011 Forecast survey ranked budget constraints and economic pressures as their No. 1 challenge in the year ahead. And six out of 10 respondents indicated that even though the economy appears to be improving, the cuts they made in the past 18 months or so will become permanent (see charts, page 23).

We're looking for internal efficiencies, but we also have to look at how to make our customers more efficient.

RICK GREENWOOD, CIO, RURAL COMMUNITY INSURANCE SERVICES

Even more notable is that the projects IT executives say rank highest on their 2011 priority lists are those designed to cut costs even more. Most of those projects fall into three broad categories: revamping and then automating various business processes; consolidating data centers and implementing technologies that help save money, such as virtualization and cloud services; and outsourcing or using software-as-a-service providers for routine tasks. The idea is that by automating and outsourcing the work that just keeps the lights on, IT departments can focus their valuable staff resources on innovative projects designed to grow the business.

But don't expect a big run-up in IT job openings. For the most part, CIOs don't expect to invest in additional full-time staff next year. Rather, the focus is on investing in new technologies that will automate operations and lower costs — and decrease the need for additional employees. The technologies that survey respondents said they are piloting or beta-testing are server virtualization, desktop virtualization, and mobile and wireless devices.

"Even in this downturn, we're seeing a significant investment in technology," says Adam Noble, CIO at GAF Materials Corp. So are his CIO peers, he says. "They're not hiring, but their investments are going up."

Energy company Southern Co.'s generation business is contemplating virtualizing all of its servers and desktops, says CIO Marie Mouchet. "It's an option we're considering systemwide. We have application virtualization and desktop virtualization pilots under way. We have had a lease program for our desktops, which we rotate every few years. As they expire, we'll be evaluating moving to virtual desktops," she says.

As for new IT jobs, "we are not looking to hire additional people to meet needs," Mouchet says. Instead, the company plans to upsize and downsize using contractors.

But there are also organizations where investments in both technology and staff are at a standstill. Among them is the Tennessee Technology Center at Shelbyville, one of 27 such centers across the state that along with six universities and 44 community colleges make up Tennessee's higher education system.

"One of the biggest problems is that there isn't revenue flowing into the state, and one of the first places they look to cut is educa-

Continued on page 22

Stimulus Money, With Strings

BOB MARTIN, CIO of Wisconsin's Department of Health Services, has plenty of money to hire direly needed IT staffers, thanks to federal funds that the state received under the 2009 American Recovery and Reinvestment Act (ARRA), also known as the stimulus program. What's thwarting him is the web of red tape and strings attached to the dollars.

One of the biggest problems is the excruciating administrative process associated with hiring in the public sector. "Hiring a contractor is a two-to-three-month effort," says Martin, who worked in the private sector for 25 years before moving to state government eight years ago. "It takes three to four times longer to do anything because of all the scrutiny and politics."

The other major hurdle involves the rules and regulations governing who can and can't be hired using stimulus money, because the act set rules restricting the types of projects that can be funded. The federal dollars must be spent on very specific programs, serving very specific constituencies. For example, Martin says the state can spend ARRA money on technology and IT staffers associated with health programs that cover children from birth to age 3.

"That's a subset of a larger statewide health plan, and you can only spend it in proportion to the number of cases," he explains. The upshot is "we have a big pot of dollars but can only spend a portion of it," he says. He still needs to find a way to pay for the people and systems related to the much larger portion of health programs – more than 95% – that are left unfunded. "It is very frustrating," Martin says. "We could get a lot more done with 15 people, but we can only pay for eight people with the [stimulus] money."

Meanwhile, Steve Mallard, IT director at the Tennessee Technology Center at Shelbyville, has a different kind of ARRA-related problem. "In 2011, when ARRA funding goes away, we're looking at 10% to 20% in cuts," he says.

Mallard says the center did receive stimulus money, which it used primarily to buy computer hardware. The funds also cover maintenance for a period of 18 months. "But after that, we lose that money, and we still have to maintain the equipment," he says. "It's like giving you a new car, but they don't give you the [long-term] maintenance on it."

– JULIA KING

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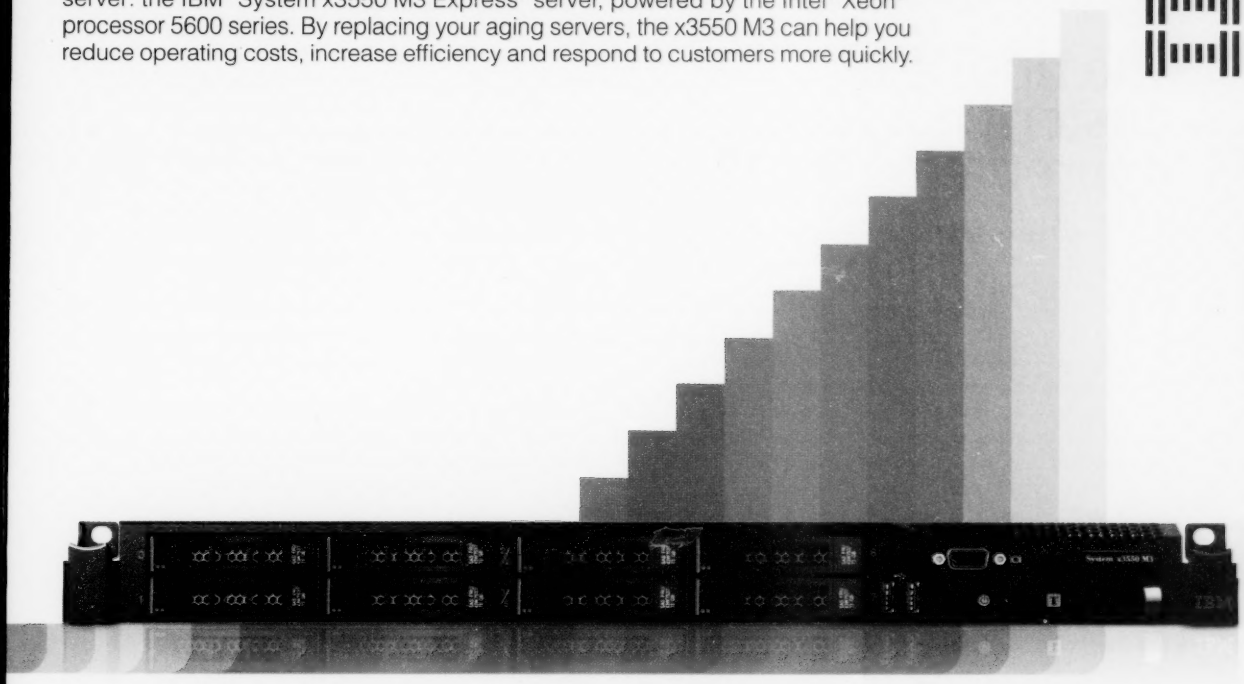

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The Upside of Austerity: A New Appreciation for IT

NEXT YEAR'S TECHNOLOGY BUDGETS are mostly flat, and cutting costs remains a top priority, but it's not all gloom and doom for IT.

Consider the case of Daniel Chan, CIO at the New York State Office of Temporary and Disability Assistance. His most experienced staffers are retiring at an alarming rate and taking years of institutional knowledge with them. In an effort to mitigate those losses, the agency is re-engineering and automating as many of its processes as possible; it's also using dashboards to better monitor expenditures and manage approval processes in a timely manner. Nonetheless, it's still looking to fill 50 jobs in the next few months.

"Our strategy is to bring in new talent from the outside, with the hope that they will look at things differently as to how we can improve our processes," says Chan. He adds that the move to automation has yielded a big unexpected benefit: "IT is a lot more joined at the hip with really high-level executive management within the government because they're seeing more and more the value that technology can bring to the table."

Other CIOs tell similar stories.

At GAF Materials, CIO Adam Noble says IT received a slight budget increase for 2011, thanks in large part to the ROI generated by investments in new IT systems during the previous two years, most notably a unified communications system for the customer service call center. The system enables customers to place orders via the Internet instead of doing so over the phone. GAF has since launched a pilot to see if chat can be incorporated into the process.

CIO Daniel Chan

Phone orders now represent the smallest percentage of overall orders. "It has completely flipped from two years ago, when 80% of our orders were taken by phone," Noble says. "We still have customer service people, but now we can use those people for other things, like up-selling." The call center has also reduced costs by 10%. After presenting those results to the company's board, Noble says, "we talked about where IT can make additional investments, and we got a slight uptick of 5% in the budget."

At PHI, top management is now calling on CIO James Quinn to help research and negotiate business matters far outside the realm of hardware, software and services.

"I just met with our CEO, and we were looking at a technology company in the roofing industry that has nothing to do with standard IT," Quinn says. "Because I'm heavily involved in negotiations and I understand how technology can impact the business, I was called in." As he sees it, "IT is almost becoming an extension of the R&D organization. Everyone talks about innovation and they look at my organization."

IT is also in charge of a companywide cost reduction program at PHI. "The initiative is being run by IT, which was chosen to lead it because of our project management experience," Quinn says.

Going forward, "I think IT will continue to be a front-runner in helping companies survive," he says. "What's going on [in the economy] is actually elevating the importance of IT. There's a huge opportunity for IT to come to the forefront of a company and show its worth."

– JULIA KING

Continued from page 20

tion. We're doing without 20% of the IT budget we had last year, and last year we had 10% less than the year before," says Steve Mallard, the center's IT director. He says he's looking for any and all ways to keep costs down, including using more open-source software, bringing on student interns to work in IT, recycling hardware, and building 40% of the computers and virtually all of the servers in use at the center.

Push-button Processes

At the Wisconsin Department of Health Services, automating the state's vital-records systems is the top project queued up for 2011. By making birth, marriage, death and divorce certificates and other documents available electronically, the state hopes to both cut costs and improve services to citizens, says CIO Bob Martin. The project comes on the heels of a recently completed $4 million statewide data center consolidation project.

But completing the vital-records project — as well as the dozens of smaller "cleanup" projects Martin has in the works for 2011 — will be difficult, since the agency doesn't plan to fill the 10% to 15% of IT positions vacated through attrition in the past year or so (see story on page 20).

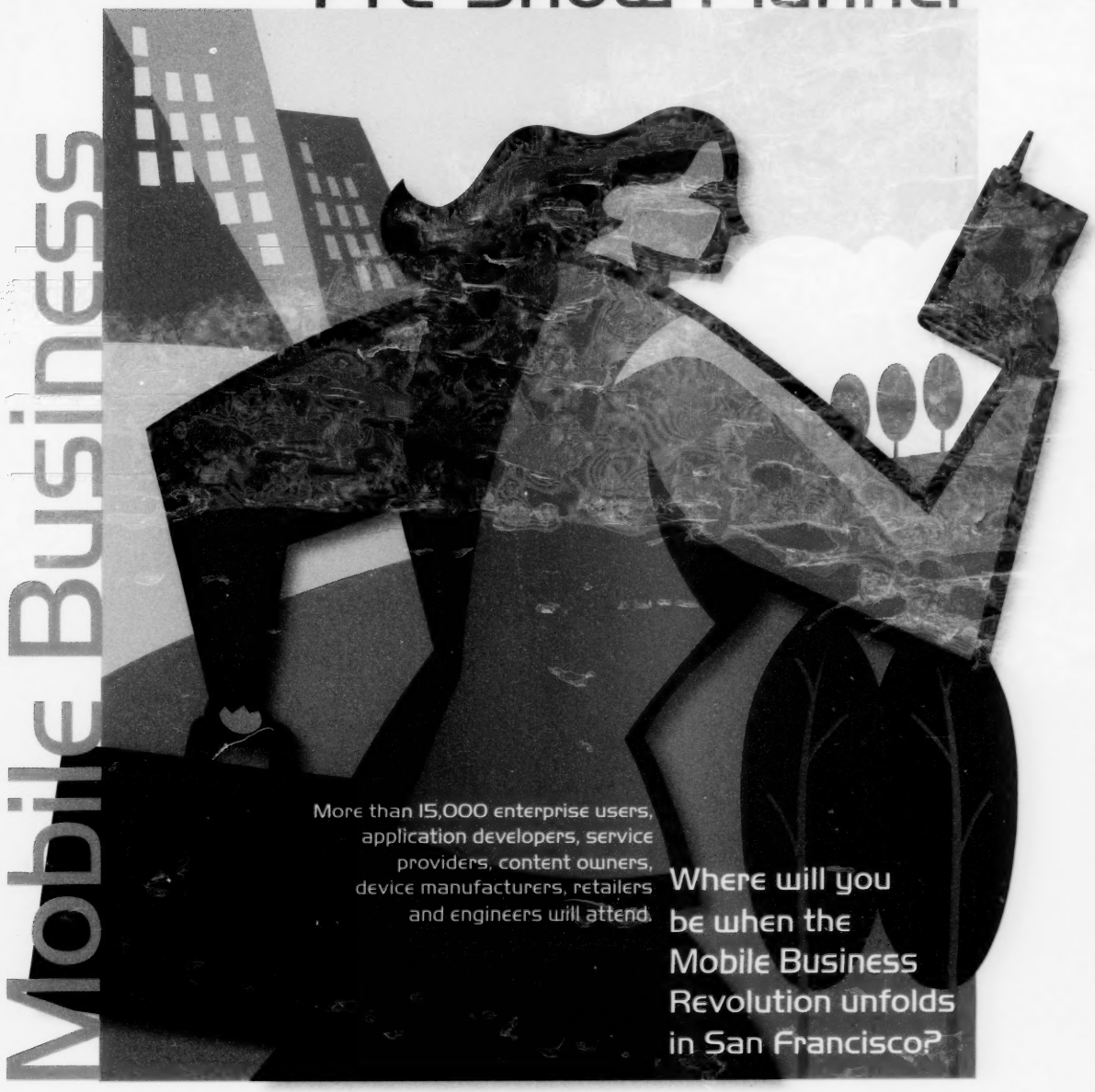
Making matters even worse is that statewide, about 35% of government employees, including many in IT, are eligible to retire in the next three to five years.

"It's a tough balancing act because at the same time that we're being asked to automate more and more — which makes perfectly good sense — there is a shifting and shuffling of roles and responsibilities among existing staff," Martin says.

"We can't fill those positions, and they may be taken away for good as part of a statewide budget fix," he adds.

Anoka, Minn.-based Rural Community Insurance Services, which provides crop insurance to the agricultural industry, is looking to revamp and streamline how customers interact with the company online. "Our customers have to do a lot of work and provide a lot of information, but we can actually prepopulate much of that information with data we already have from other agencies," explains CIO Rick Greenwood. By prepopulating crop data

Pre-Show Planner



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CTIA Schedule-at-a-Glance

PRE-CONFERENCE: Tuesday, October 5

Registration	**8:00 AM – 5:00 PM**
Andrew Seybold Wireless University	9:00 AM – 5:30 PM
FCBA Seminar West	**9:00 AM – 5:00 PM**
GPS-WIRELESS 2010	9:00 AM – 6:00 PM
Mobile Marketing & Promotion	**9:00 AM – 5:30 PM**
Mobile Web and Apps World Forum	9:00 AM – 5:00 PM
The Music App Summit @ Billboard Mobile Entertainment Live!, Presented by Logic Wireless	9:00 AM – 5:30 PM
Nokia Developer Day	9:00 AM – 5:00 PM
Enterprise Mobility Boot Camp Part I - Basic Training	**1:00 PM – 6:00 PM**

DAY ONE: Wednesday, October 6

Registration	**8:00 AM – 5:00 PM**
CTIA VIP Club	**8:00 AM – 5:00 PM**
CTIA Keynote Sessions	**9:30 AM – 11:00 AM**
Exhibit Floor	**11:00 AM – 5:00 PM**
Enabling Smart Energy Initiatives through Wireless Infrastructure and Distributed Computing - presented by Accenture	12:30 PM – 4:00 PM
iPad and Tablet Publishing and Entertainment Apps	11:00 AM – 6:00 PM
MobiHealthNews.com Presents: Everywhere Healthcare	11:00 AM – 5:00 PM
Mobile Commerce: Value over Mobile	11:00 AM – 5:00 PM
Telecom Council Innovation Showcase	11:00 AM – 5:00 PM
CTIA Educational Sessions	**1:00 PM – 5:15 PM**
Enterprise Mobility Boot Camp Part II - Field Operations	**1:00 PM – 5:00 PM**
Ovum VIP Tour: Enterprise Solutions	1:00 PM
Ovum VIP Tour: Mobile Consumer Electronics (CE)	2:00 PM
Children & Teens in a Mobile World	**2:00 PM – 5:15 PM**
Ovum VIP Tour: Mobile Apps, Media & Content	3:00 PM
Ovum VIP Tour: Wireless Health	4:00 PM

DAY TWO: Thursday, October 7

Registration	**8:00 AM – 5:00 PM**
CTIA VIP Club	**8:00 AM – 5:00 PM**
CTIA Keynote Sessions	**9:30 AM – 10:30 AM**
Mobile Digital Television: Live, Local TV Keeps Viewers Glued to Programming	10:30 AM – 12:30 PM
Exhibit Floor	**10:30 AM – 5:00 PM**
Telecom Council Innovation Showcase	10:30 AM – 5:00 PM
Android Bootcamp	11:00 AM – 5:00 PM
Brighthand Mobile Film Festival	11:00 AM – 1:00 PM
The Disruptive Technologies Perfect Storm: The Next Decade of Innovation	11:00 AM – 5:30 PM
eWEEK Presents: Mobile Security in the Enterprise	11:00 AM – 1:00 PM
M2M Connected Devices Conference	11:00 AM – 1:00 PM
Mobile Entertainment Forum Panels	11:00 AM – 5:00 PM
CTIA Educational Sessions	**1:00 PM – 5:15 PM**
Open Mobile Solutions Developer Pitch Sessions	1:00 PM – 5:00 PM
CTIA Hot for the Holidays Awards Ceremony	**2:00 PM**
The Power of Mobile Cloud Computing Conference	2:00 PM – 3:30 PM
The New Consumer Mindset	3:00 PM – 5:00 PM
PGA - New Media Council Presents: "Mobile Content in Motion"	3:00 PM – 9:00 PM

DAY THREE: Friday, October 8

Registration	**8:30 AM – 3:00 PM**
CTIA VIP Club	**8:30 AM – 3:00 PM**
CTIA Keynote Sessions	**9:30 AM – 10:30 AM**
Exhibit Floor	**10:30 AM – 3:00 PM**
Telecom Council Innovation Showcase	10:30 AM – 3:00 PM
Android Bootcamp	11:00 AM – 3:00 PM
Mobile Entertainment Forum Panel	11:00 AM – 12:30 PM
WCA Presents: What's Hot about LBS?	11:00 AM – 12:30 PM

	Super Pass	VIP Pass	Conference Pass	Daily Pass	Individual Session Pass	Exhibits Pass	Partner Events Pass
Level 1							
Moscone West Room 2002	●						●
Moscone West Room 2012	●						●
Moscone West Room 2007/2009	●						●
Moscone West Room 2004	●						●
Moscone West Room 2006	●						●
Moscone West Room 3000/3002/3004	●						●
Moscone West Room 2003	●	●	●	●	●	●	●
Moscone West Room 2005	●						●
Level 1							
Level 3	●	●	●	●	●	●	●
Level 3	●	●	●	●	●	●	●
Level 1	●	●	●	●	●	●	●
Moscone West Room 2003	●	●	●	●	●	●	●
Moscone West Room 2020	●						●
Moscone West Room 2012	●	●	●	●	●	●	●
Moscone West Room 2018	●	●	●	●	●	●	●
Level 1, Booth 908	●	●	●	●	●	●	●
Rooms 2002, 2004, 2006 & 2008	●	●	●	●	●		
Moscone West Room 2005/2007	●						●
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Moscone West Room 2000	●	●	●	●	●	●	●
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Level 1							
Level 3	●	●					
Level 3	●	●	●	●	●	●	●
Innovations Stage, Level 2	●	●	●	●	●	●	●
Level 1	●	●	●	●	●	●	●
Level 1, Booth 908	●	●	●	●	●	●	●
Moscone West Room 2007	●	●	●	●	●	●	●
Moscone West Room 2018	●	●	●	●	●	●	●
Moscone West Room 2000	●	●	●	●	●	●	●
Moscone West Room 2005	●	●	●	●	●	●	●
Moscone West Room 2003	●	●	●	●	●	●	●
Moscone West Room 2012	●	●	●	●	●	●	●
Rooms 2002, 2004, 2006 & 2008	●	●	●	●	●		
Moscone West Room 2020	●	●	●	●	●	●	●
Innovations Stage, Level 2	●	●	●	●	●	●	●
Moscone West Room 2003	●	●	●	●	●	●	●
Moscone West Room 2018	●	●	●	●	●	●	●
Moscone West Room 2005	●	●	●	●	●	●	●
Level 1							
Level 3	●	●					
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Level 1	●	●	●	●	●	●	●
Level 1, Booth 908	●	●	●	●	●	●	●
Moscone West Room 2007	●	●	●	●	●	●	●
Moscone West Room 2012	●	●	●	●	●	●	●
Moscone West Room 2018	●	●	●	●	●	●	●

***CTIA events in BOLD.** Schedule subject to change.

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Date: Wednesday, October 6
Times: 1:00 PM, 2:00 PM, 3:00 PM, 4:00 PM
Group Size: Each group will be limited to a maximum of 25 attendees

Tour Details:
1:00 PM — **Enterprise Solutions**
2:00 PM — **Mobile Consumer Electronics** (CE)
3:00 PM — **Mobile Apps, Media & Content**
4:00 PM — **Wireless Health**

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John S. Chen
CEO & President
Sybase, Inc.

Dr. Kristina M. Johnson
Under Secretary
U.S. Department of Energy

Lowell McAdam
President & CEO
Verizon Wireless

Keynote Host

Steve Largent
President & CEO
CTIA–The Wireless Association

DAY TWO | Thursday, October 7 | 9:30AM–10:30AM

CIO Roundtable: Wireless Revolutionizing the Workplace

MEDIA SPONSORS InformationWeek LIGHT READING MOBILE

MODERATOR:
Bob Evans
Senior VP & "Global CIO" Director
InformationWeek

John R. Dick
Senior VP & CIO
Western Union

Jackie Woods
Systems Manager
UPS

Rusty Yeager
VP & Deputy CIO
HealthSouth

DAY THREE | Friday, October 8 | 9:30AM–10:30AM

The Connected Car and a Carrier's Impact on the Enterprise

Derrick M. Kuzak
Group VP, Global Product Development
Ford Motor Company

Ronald E. Spears
President & CEO
AT&T Business Solutions

CTIA Hot for the Holidays

CTIA 2010 HOT FOR THE HOLIDAYS

The CTIA Hot for the Holidays awards program was created in 2009 to identify and celebrate the hottest mobile consumer electronics products and applications for the holiday season. Judged on innovation, functionality, technological impact, ease of use and overall "wow" factor, the winners will be the "must-buy gifts" for people of all ages this 2010 holiday!

This year there are ten (10) nomination categories covering a wide variety of interests, hobbies and passions to identify the best hottest CE gifts for everyone on your shopping list!

- ***Fashionista***—accessories, luxury mobile products, brand name and high-end devices, etc.
- ***Fitness Buff***—fitness apps, devices, accessories, etc.
- ***Gadget Guru***—the latest, most innovative mobile consumer electronics (CE) devices on the market
- ***Gamer & Entertainment Fan***—gaming and entertainment apps, services, devices and accessories
- ***Globetrotter***—location-based services, travel entertainment apps, ticketing solutions, embedded GPS devices, booking and reservation services, etc.
- ***Health & Wellness Nut***—apps and devices that help to monitor health, encourage wellness and enhance patient care
- ***Music Enthusiast***—music phones, apps, bluetooth and other accessories, etc.
- ***Road Warrior***—tablets/pads, smartphones, netbooks, Bluetooth accessories/headsets, productivity apps, etc.
- ***Shutter Bug***—camera phones, accessories, photo sharing apps, etc.
- ***Social Butterfly***—apps and devices that make staying socially "networked" easy

Two Special Opportunities to Win— The **HOT** ONES!

Aside from ten (10) nomination categories above, there are two additional opportunities to win:

Hottest Web Pick

The entry that wins the highest number of online votes will be named "Hottest Web Pick."

Hottest in Show

The entry within the showcase that garners the highest number of onsite text votes will be named "Hottest in Show."

For complete details and to vote, please go to **www.ctiashow.com/awards**.

All accepted entries, regardless of winning or finalist status, will be included in the Product Showcase.

Be there when the winners are announced!

Thursday, October 7
2:00 PM
Innovations Stage, Level 2

CTIA Registration Packages

SUPER PASS—*Best value for your time and money!* TOTAL ACCESS!

Get the pass that gets you everything! The only pass that gives you access to the CTIA VIP Club, CTIA Educational Sessions, Exhibit Floor, CTIA Keynotes, and ALL Partner Events.

MEMBER $1,049 **NON-MEMBER** $1,205

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Select this pass for access to the CTIA VIP Club, CTIA Educational Sessions, Exhibit Floor and CTIA Keynotes.

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Select this pass for one full day of CTIA Educational Sessions and access to the Exhibit Floor and CTIA Keynotes for all three days.

You choose Wednesday, October 6 **OR** *Thursday, October 7. Rates shown are per day.*

MEMBER $285 **NON-MEMBER** $335

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Access to purchased number of CTIA Educational Sessions. Attendees now have the flexibility of purchasing individual CTIA Educational Sessions! Rates shown are per individual session. Also access the Exhibit Floor and Keynotes for all three days!

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Exhibits Pass Bonus Offer: Add one Educational Session for an additional $30

MEMBER $79 **NON-MEMBER** $89

Access to only one CTIA Educational Session permitted with Bonus Offer.

PARTNER EVENTS PASS

Registration fees vary among Partner Events.

Please refer to individual partner event information on pages 24–31 for rates.

- Super Pass
- VIP Pass
- Conference Pass
- Daily Pass
- Individual Session Pass
- Exhibits Pass
- Partner Event Pass

CTIA VIP Club

PLATINUM SPONSOR: at&t

Wednesday–Friday, October 6–8 Level 3

As a **Super Pass** or **VIP Pass** registrant you will receive exclusive access to the CTIA VIP Club.

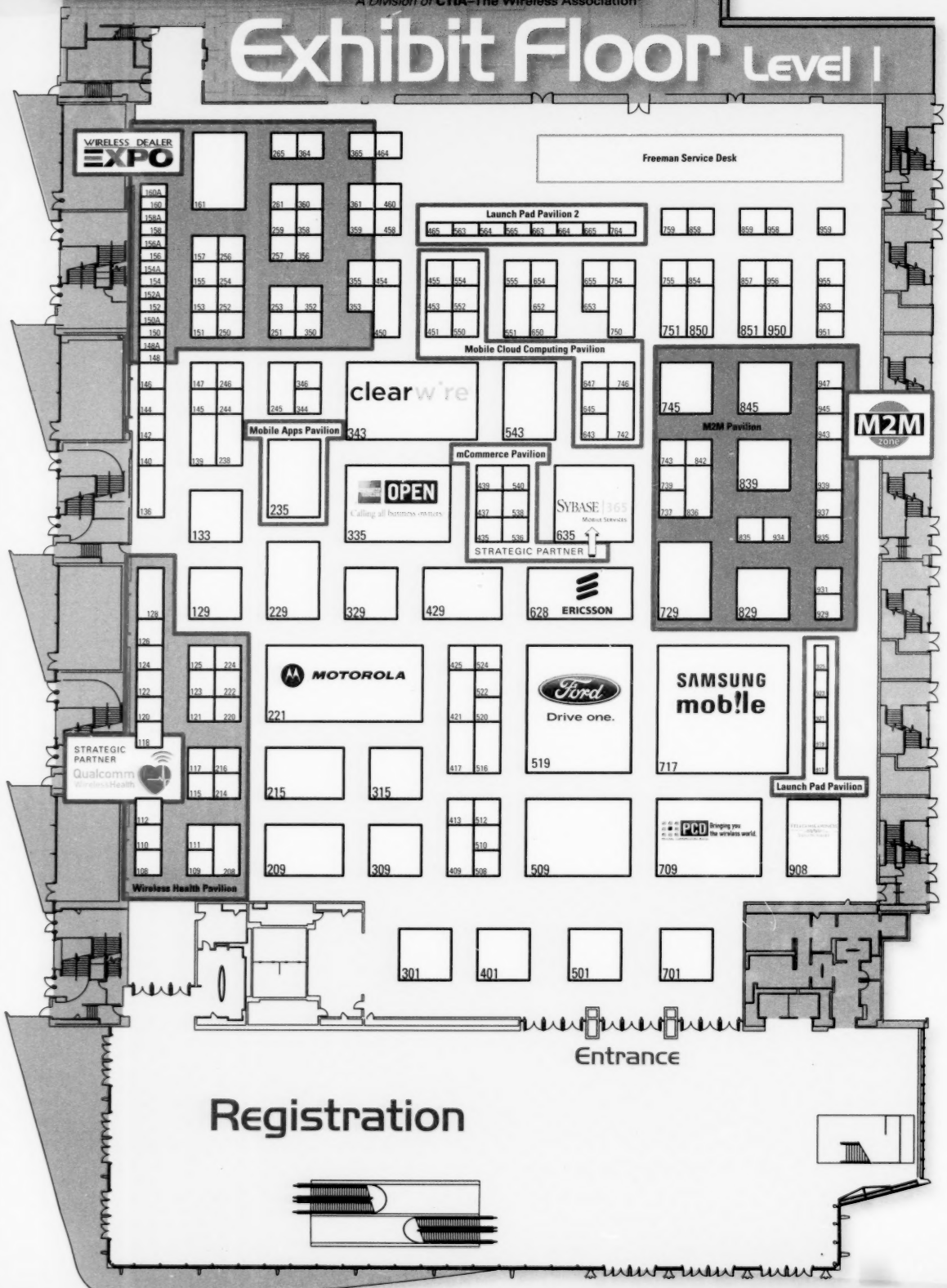
Make better use of your time and take a dent out of your travel expense report with the CTIA VIP Club—the perfect satellite office while on the road:

- *Host small private meetings;*
- *Enjoy refreshments;*
- *Rest in a spacious, comfortable lounge, and;*
- *Take advantage of business equipment and WiFi access.*

CTIA Enterprise & Applications

A Division of CTIA–The Wireless Association®

Exhibit Floor Level I



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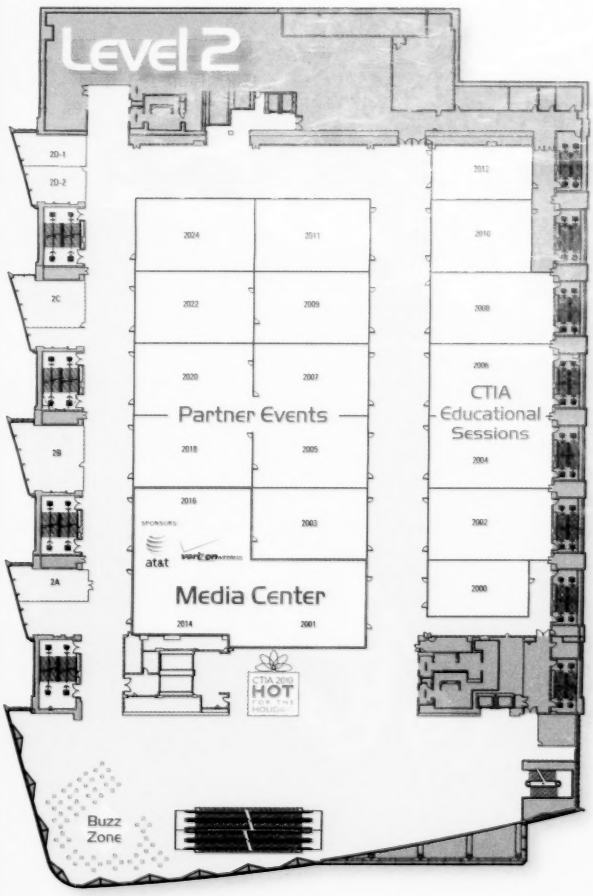
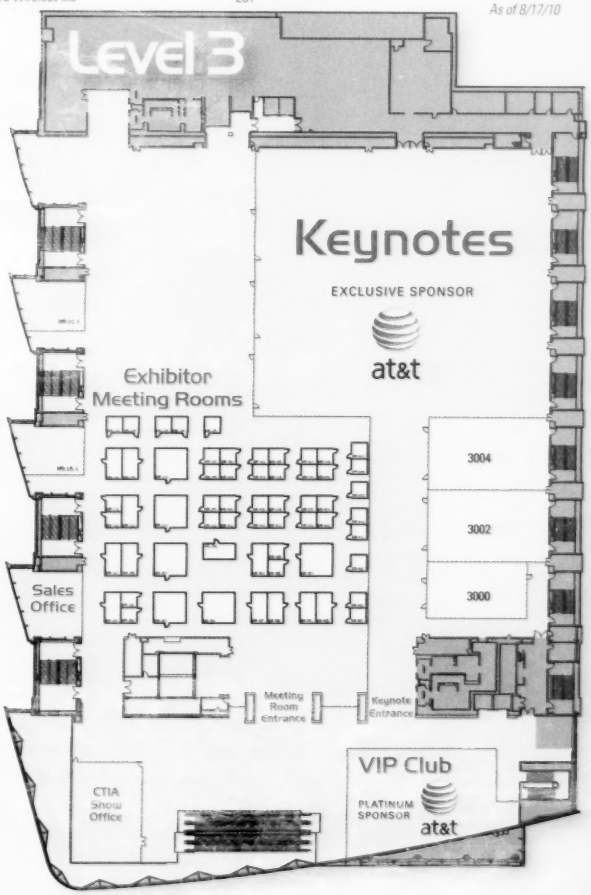
As of 8/17/10





CTIA would like to thank the following companies for coverage and infrastructure support for CTIA ENTERPRISE & APPLICATIONS™ 2010:

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Official Event Spectrum Manager

CTIA Pavilions

JUST EXPANDED!

Launch Pad Pavilion I & II

Showcasing brilliant products and ideas from start-up companies, CTIA's Launch Pad Pavilions are your first stop on the exhibit floor to see companies looking to make their mark in tomorrow's wireless marketplace. Exhibitors run the gamut of mobile apps, mobile marketing, and wireless solutions, making their debut in the wireless world.

- GetWireless, Booth 921
- Glacier Peak Technologies LLC, Booth 465
- MobilePundits, Booth 925
- Peter Fish Ltd, Booth 917

NEW!

Mobile Apps Pavilion

The Mobile Apps market is experiencing unprecedented growth and generating access to untapped revenues for handset manufacturers and carriers alike. CTIA's Mobile Apps Pavilion is your key to staying on top of the latest and greatest mobile platforms, mobile content, social networking, and application delivery solutions.

- Emdigo, Booth 235E
- Land Out technologies, Booth 235F
- Mozido, Booth 235C
- Push Mobile Media, Booth 235A
- Quicktate, Booth 235I
- SportsDirect Inc., Booth 235D
- STATS LLC, Booth 235J
- The Sports Network, Booth 235B
- WirelessWERX Inc., Booth 235G

NEW!

Mobile Cloud Computing Pavilion

This new pavilion will showcase the complete mobile cloud computing ecosystem—networks, infrastructure, data storage services, data processing, security, and applications. This must-see area will be your resource in mobile cloud computing as you explore everything from public and private cloud services to utility and hybrid cloud services.

- Aepona, Booth 451
- AirWatch, Booth 742
- Axeda Corporation, Booth 647
- Netbiscuits Inc., Booth 746
- Sevenval – Mobile Web Development Software, Booth 645
- Smaato, Booth 643
- SPB Software, Booth 552
- Virtua Data Center, Booth 550

NEW!

mCommerce Pavilion

STRATEGIC PARTNER: SYBASE 365 MOBILE SERVICES

This new pavilion encompasses the growing capabilities of mCommerce and showcases companies providing the platforms, applications and systems that enable mobile payments, mobile banking and mobile remittance. See the key players within this explosive ecosystem, in one place!

- ViVOtech Inc., Booth 536

Wireless Health Pavilion

Back by Popular Demand!

STRATEGIC PARTNER: Qualcomm Wireless Health

The Wireless Health Pavilion presents the latest offerings from companies providing products, developing applications and managing networks that empower healthcare providers and enhance communication among healthcare professionals and patients. These innovations monitor your health remotely and include: tracking daily habits, managing health records, inventory tracking and supporting all-around physical wellness.

SUPPORTING PARTNERS: ATA wi-fit Wireless Life Sciences Alliance

- Damaka, Booth 224
- iMetrikus, Inc., Booth 220
- iVisit, LLC, Booth 222
- NETMOTION WIRELESS, Booth 216
- Qualcomm Wireless Health, Booth 128
- Telcare, Booth 208

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App available on:

M2M Zone

The M2M Zone organizes events around the globe where network operators, application designers, hardware manufacturers and end users come together to showcase wireless Machine-to-Machine communications products and services. The next evolution in communications, M2M represents a dynamic global market. Visit the M2M Zone Pavilion for the latest innovations in the M2M field. For more information, please visit www.m2mzone.com.

- 7 Layers, Booth 743
- CETECOM Inc., Booth 835
- Cinterion Wireless Modules, Booth 745
- Enfora, Booth 937
- FreightWatch Security Net, Booth 842
- KORE Telematics, Booth 729
- Laird Technologies, Booth 935
- M2M Zone, Booth 945
- Maestro Wireless Solutions, Booth 931
- Multi-Tech Systems, Inc., Booth 829
- Numerex, Booth 845
- ORBCOMM, Booth 934
- Quake Global Inc., Booth 945
- RACO Industries, Inc., Booth 737
- Taoglas Limited, Booth 836
- Telecommunications Media Group, Booth 951
- Telenor Connexion AB, Booth 929
- Telit Wireless Solutions, Booth 839
- T-Mobile, Booth 739, MR-200
- Wyless Group, Booth 943

CTIA Pavilions

Telecom Council Innovation Showcase

TELECOMCOUNCIL
SILICON VALLEY

The Telecom Council is working with CTIA ENTERPRISE & APPLICATIONS™ 2010 to promote innovation, startups, and entrepreneurs in the wireless industry by highlighting them on the show floor and with stage time. Over 100 wireless entrepreneurs from every segment of the ecosystem applied to be included in this showcase. Applications were judged by an influential Council member panel based on standard Telecom Council criteria—innovation, momentum, viability, and management. Together with our judges from AT&T, Verizon Wireless, Marvell, Huawei, Qualcomm, Motorola and others, the Council is proud to bring 16 forward-thinking companies to the CTIA ENTERPRISE & APPLICATIONS™ audience at Booth 908.

- Billing Revolution Single-Click Checkout, Booth 908A
- Bluetest AB, Booth 908M
- ConnectSoft, Booth 908N
- DeviceFidelity, Booth 908F
- iSpeech, Booth 908E
- Jorno, Booth 908J
- Mob4Hire.com, Booth 908C
- MoSync AB, Booth 908O
- Public Wireless, Booth 908I
- RebelVox LLC, Booth 908G
- SaFPWR®, a SigFx Energy, LLC Brand, Booth 908D
- Trilibis Mobile, Booth 908B
- VisTracks Corporation, Booth 908L
- Vlingo, Booth 908H
- Yap, Booth 908K

Wireless Dealer Expo 2010

WIRELESS DEALER EXPO

Don't miss THE retail buyer's event of the year held onsite at the CTIA ENTERPRISE & APPLICATIONS™ 2010 show! This area is designed expressly for independent wireless retailers. Join wireless retail buyers and suppliers for spectacular holiday buying offers available on the showroom floor in San Francisco! Network among thousands of industry professionals, wholesalers, distributors, manufacturers and carriers! For more information, please visit www.wirelessdealerexpo.com.

- Amzer, Booth 254
- Digital Wireless, Booth 148A
- Fashion Electronics International, Booth 250
- Hypercel Corp., Booth 160A
- Mobile-net, Booth 353
- Sahara Wireless Inc., Booth 251
- Telispire, Booth 356
- TESSCO Technologies, Booth 148
- V-Docs and Symbits, Booth 355
- Wireless Repair Training Center/ iGeneration, Booth 257

CTIA Educational Sessions

CTIA's Educational Session Tracks are designed to expand your knowledge and elevate your understanding of wireless solutions focusing on key applications, implementation approaches and experiences, best practices and case studies. Stay informed and stay competitive by registering for access to these invaluable sessions.

Mobile Applications

Wednesday–Thursday, October 6–7, Room 2002 SPONSORS: NTT docomo, Syniverse Technologies

Mobile Enterprise

Wednesday–Thursday, October 6–7, Room 2004 SPONSOR: at&t MEDIA SPONSOR: Wireless

Mobile Money

Wednesday, October 6, Room 2006 SPONSOR: Syniverse Technologies

Mobile Retail

Wednesday, October 6, Room 2008

Location Based Services

Thursday, October 7, Room 2006 SPONSOR: Syniverse Technologies

Mobile Health

Thursday, October 7, Room 2008 HONORARY SPONSORS: Qualcomm Wireless Health, ATA, wi-fit, Wireless-Life Sciences Alliance

MEDIA SPONSOR: InformationWeek

CTIA Wireless Internet Caucus

An Initiative of CTIA–The Wireless Association®

Special thanks to the sponsors of this year's Wireless Internet Caucus Reception, an invitation-only networking event held for the panelists, moderators, sponsors, CTIA board member companies and Wireless Internet Caucus member companies that have contributed to the success of the CTIA Educational Sessions at CTIA ENTERPRISE & APPLICATIONS™ 2010.

BilltoMobile™ Interop™ TECHNOLOGIES ZONG

Mobile Applications Track

SPONSORS: NTT docomo, Syniverse Technologies

Wednesday, October 6 11:00AM – 5:15PM
Thursday, October 7 1:00PM – 5:15PM
Room 2002

The explosion of mobile applications presents both distinct challenges and endless opportunities. While applications have become the darling of the mobile content space, enabling new levels of consumer interaction and loyalty, the fragmentation brought on by open initiatives has created new complexities for publishers and media companies. The Mobile Applications Track will take an in-depth look at the latest trends and development cycles influencing tomorrow's applications and will reveal what carriers, application developers and marketing professionals are doing to make the most of mobile's unique capabilities as the application craze continues to grow.

Day One • Wednesday, October 6

VC Portfolio Company Review

11:00AM — 12:45 PM

Members of CTIA's VC Innovation Council will review companies in their respective portfolios. Their presentations will highlight three aspects which were key deciding elements in the funding process: company strategic vision review, company management review and carrier relationships relating to revenue development.

MODERATOR:

Kate Kingberger
Director, Wireless Internet Development
CTIA–The Wireless Association

CTIA'S VC INNOVATION COUNCIL IS COMPRISED OF:

Accel Partners; Rich Wong
Khosla Ventures; Dave Weiden
Kleiner Perkins; Matt Murphy
NorWest Partners; Tim Chang
OPENAir Ventures; Scott Ford
RedPoint Ventures; Scott Raney
Seapoint Ventures; Tom Huseby
VenRock Ventures; Dev Khare

Applications Keynote:

PRESENTED BY DOCOMO

1:00 PM

Masaaki Maeda
President and CEO
NTT DOCOMO USA, Inc.

Mobile Content Issues: Overcoming App Fragmentation

1:15 PM — 2:30 PM

Openness has lead to fragmentation in the app space—creating obstacles for carriers, app stores and developers alike in creating and managing innovative applications. This session will reveal strategies for industry players to counteract fragmentation and unlock new market opportunities. Industry-wide tactics for overcoming the hurdles associated with the disparate monetization across platforms, and the different flavors of subscription models and revenue sharing, will also be explored.

MODERATOR:

Roger Entner
SVP, Research & Insights, Telecom
The Nielsen Company

SPEAKERS:

Eric Berger
Senior Vice President, Digital Networks
Sony Pictures Television

Bryan Biniak
VP, Global Head of Ovi Publishing
Nokia

Brandon Lucas
Vice-President and General Manager, Mobile
Black Entertainment Television

Laura Merling
VP of Global Developer Platforms
Alcatel-Lucent

Applications, Social Networking

2:45 PM — 4:00 PM

Mobile communications devices and applications are primarily designed to increase efficiency and productivity for professionals on the go. However, in recent years, mobile subscribers have expanded the utility of such technology to meet their social needs as well. For many people, particularly younger users, iPhone, Android, BlackBerry devices, and other handhelds primarily have a social function. As witnessed by the MySpace, Facebook, and Twitter explosion, many more companies have exploited the growing demand for social-mobile applications. Over the next 12-18 months, mobile investment is expected to increase, while investment in social applications is expected to remain flat. Does this mean social apps are losing their appeal? Also, recent reports indicate that Apple was responsible for 99.4% of all mobile app sales in 2009. Is there room for anyone else? This panel will explain why some predict that mobile app revenue will hit $25 billion by 2014 as well as the key drivers behind such growth.

MODERATOR:

Mark Donovan
SVP, Mobile + Sr. Analyst
comScore, Inc.

SPEAKERS:

Ray DeRenzo
Chief Marketing Officer
MobiTV, Inc.

Andrew Fisher
CEO
Shazam Entertainment

Jen Herman
Director of FarmVille Mobile
Zynga

Patrick Mork
Chief Marketing Officer
GetJar

Jan-Joost Rueb
CEO
eBuddy

William Volk
CEO
PlayScreen

Taking In-Game Advertising to the Next Level

4:15 PM — 5:15 PM

The rise of social networking and augmented reality in mobile games has taken the long-hyped area of "advergaming" to new levels. This session will expose the specific

synergies marketers, advertisers and game publishers are leveraging to produce relevant and effective campaigns within games for optimum impact.

MODERATOR:

Melissa Geffert
Director
F&L International Inc

SPEAKERS:

Herbert Bay
CEO
Kooaba

Greg Davis
General Manager, North America
Total Immersion

Niccolo de Masi
President and CEO
Glu Mobile

Phill Simon
Partner, Creative Director
Mondo Studios

Day Two • Thursday, October 7

Applications, Brand Panel

1:00 PM — 2:15 PM

With over 270 million wireless subscribers in the U.S. alone, brands and agencies are spending an increasing amount of time focused on creating a brand presence that is specific to mobile. According to TNS Media Intelligence, the consumer package goods industry spent nearly $2 billion on advertising in the U.S. during the first half of 2009. Even with that spend, many marketers view mobile applications as their opportunity to gain competitive advantage against their competition. As the medium continues to expand, how do brands view mobile in relation to other engagement platforms? Are mobile applications simply a fad or are they the future? How does smartphone penetration and their resulting data plans affect a consumer's ability to engage with a brand via an application? This panel will explore the world of mobile apps from a brand's perspective and provide insight into other ways to leverage the unique capabilities of mobile.

MODERATOR:

Jonathan Carson
CEO
The Nielsen Company

SPEAKERS:

Rob Gelick
SVP & GM, CBS Mobile
CBS Interactive

Bryan Perez
SVP/GM
NBA Digital

Adam Ritter
Vice President, Wireless
MLB Advanced Media

Jim Rondinelli
SVP
Slacker, Inc.

Daren Tsui
CEO and Co-founder
mSpot

Ge Wang
Co-Founder, CTO, Chief Creative Officer
Smule

Marketing Analytics

2:30 PM — 3:45 PM

Many business owners are showing interest in measuring the effect of their investment into mobile through mobile analytics. Unfortunately, the task of measuring mobile is not easy given the numerous operating systems, devices, requirements, and rapid evolution that must be navigated to obtain credible data. Adding to the complexity is the emergence of a host of companies, all claiming a unique ability to measure the mobile opportunity. This analytically-minded panel will separate the hype and hyperbole associated with these claims and provide a more realistic picture of what analytics mean for the industry and more importantly for those looking to increase investment in the mobile space.

MODERATOR:

Adam Guy
Vice President - Client Services
Compete, Inc.

SPEAKERS:

Raj Aggarwal
CEO
Localytics

Ray Anderson
CEO
Bango

Jerome Baccelli
CEO
Pyramidata

Michael Collins
CEO
Joule

Jim Ryan
Director
Phonevalley

Jamie Wells
Global Director of Trade Marketing
Microsoft Mobile Advertising Solutions

Mobile Marketing Enablers

4:00 PM — 5:15 PM

During the past 12 to 18 months a number of significant and substantial trends in the wireless industry have created the perfect storm of incentives for brands to embrace mobile marketing. Specifically, the percentage of mobile users with unlimited data plans grew from 16 percent to 21 percent, smartphone ownership increased from 11 percent to 17 percent, and network capabilities have accelerated as 3G and 4G services have emerged. Now is the time that users can watch videos and listen to music, send and receive instant messages and keep up with their friends and associates using devices with greater confidence. This group of industry veterans will review how the industry in converging on a number of fronts, making the mobile marketing opportunity more appealing to interested parties.

MODERATOR:

Saj Cherian
Principal
Valhalia Partners

SPEAKERS:

Daniella Alpher
Head of Advertising
fring

Ernie Cormier
CEO & President
Nexage

Ran Farmer
Managing Director US
Netbiscuits Inc.

Chris Hill
VP - Mobility Product Management
AT&T

Dakota Sullivan
Vice President, Global Marketing
Velti

Richard Wong
Partner
Accel Partners

** Program & Speakers Subject to Change*

Mobile Enterprise Track

SPONSOR: at&t MEDIA SPONSOR: Wireless WEEK

Wednesday, October 6 1:00PM – 5:15PM
Thursday, October 7 1:00PM – 5:15PM
Room 2004

Wireless means business. Enterprise deployments of mobile technologies have revolutionized operations in the areas of fleet, field and resource management. The Mobile Enterprise Track will focus on real world deployments and case studies highlighting cutting-edge mobile capabilities that CIOs and IT managers can leverage to boost their companies' internal productivity. In addition, this track will look to future wireless solutions designed to enhance the end-user's service levels and experiences.

Day One ● Wednesday, October 6

Enterprise Device Update

1:00 PM — 2:15 PM

Mobile devices are indispensible business tools connecting the always on-the-go workforce round the clock. This session will provide an overview of the latest and greatest mobile devices for business users, highlighting their potential to revolutionize the efficiency of the enterprise. Specific attention will be paid to the functionality, access speeds and bandwidth requirements necessary for the devices to work properly and meet the needs of users.

MODERATOR:

Michael Grossi
Director
Altman Vilandrie & Company

SPEAKERS:

Jim Cathey
VP Business Development
Qualcomm

Nick DiCarlo
Vice President of Product Planning
Samsung Telecommunications America

Sue Forbes
Vice President, Apps and Experiences Product Management
Motorola Inc.

Matthew Parker
General Manager, Atom Client Division
Intel Corporation

Embracing the Mobile Cloud

2:30 PM — 3:45 PM

Panelists will provide evidence that combining cloud services with mobility will not only accelerate the uptake of mobility, but will expand the overall value of mobility. Hear how mobility is a critical requirement to cloud computing and connectivity is the link to access services in the cloud. Learn about unique research that reveals how business users are embracing the mobile cloud, and how software as a service solution on mobile empowers the use of cloud services beyond PC-based. Panelists will discuss security features like remote wipe, password enforcement and the ability to manage information if a device is lost that will be needed if enterprises are to fully embrace the cloud. Case study examples of Fortune 500 and small/medium businesses using their own mobile cloud will be offered.

MODERATOR: TBD

SPEAKERS:

Arpit Joshipura
VP, Strategy & Market Development
Ericsson

Michael Manos
VP Hosting Operations Production
Nokia

Dan Rudolph
Director of Product Marketing
Motorola Good Technology Group

Jim Szafranski
SVP, Customer Platform Services
Fiberlink Communications

Stuart Taylor
Managing Director, North American Mobile Segment
Cisco Systems

Carrier Perspectives on Telematics

4:00 PM — 5:15 PM

A major area of innovation in the wireless world is in the area of Telematics. Telematics is predicted to be one of the largest areas of growth in the next three years. Learn from experts who have decision-making authority on which product lines are supported, which partnerships get formed, how marketing to enterprises occurs, and how sales support of enterprise customers is implemented.

MODERATOR TBD:

SPEAKERS:

Angel Mercedes
Business Development Manager, Telematics
T-Mobile USA

Wayne Ward
Vice President, Emerging Solutions
Sprint

Win Williams
Area Vice President, Corporate Development, Emerging Devices Organization
AT&T

Resource Management

1:00 PM — 2:15 PM

"Effective" and "efficient" are the twin mantras of any enterprise. This essential session for CIO and IT managers will highlight how to optimize assets in the workplace. The presenting panelists have unique cases where wireless technologies have been utilized to improve ROI, speed of product, better customer service, lower error processing.

MODERATOR:

Mary Foltz
Consultant
TMNG Global

SPEAKERS:

Robin Dargue
Chief Information Officer
Royal Mail Group

Mario Proietti
Founder and Chief Technical Officer
TechnoCom Corporation

Ananth Rani
Senior Vice President of Products and Services
Xora, Inc.

Bob Stern
Product Marketing Manager
Trimble

Fleet Management, Transit Efficiency

2:30 PM — 3:45 AM

The enterprise manager needs to leverage the benefits of wireless technology to improve productivity of both workers and assets. Additionally, tracking of vehicles, their routes and maintenance reporting is made easier. This session combines Enterprise Software companies and Wireless Application providers who will describe how they brought significant improvement to their customers' productivity using the latest in enterprise tools.

MODERATOR:

Steven Brumer
President
Wireless Rain

SPEAKERS:

Alan Gould
President
Westlake Software, Inc.

Tim Lorello
Senior Vice President
TeleCommunication Systems, Inc.

Patrick McDevitt
Vice President, Community Mapping
TomTom

Nigel Thompson
VP of Cloud Services
Good Technology

Renaat Ver Eecke
Vice President, North America
Navman Wireless

Field Services

4:00 PM — 5:15 PM

Managing remote work forces has always been challenging. Wireless solutions are being used to make managing the people, information and work flow more smoothly than ever before. The group of panelists each has multiple sets of people in the field tasked with sales, customer support and maintenance duties. The discussion will revolve around how selection decisions were made regarding wireless solutions and partners; how the implementation process went; and how quickly leveraging the benefits of mobile showed up in their Field Sales reports. The ultimate goal of more business and happier customers are evident in these companies and these executives will share how their companies have grown to rely on wireless solutions.

MODERATOR:

Gene Signorini
VP, Anywhere Enterprise Research
Yankee Group

SPEAKERS:

John Dynes
Vice President of Client Relations
Mobile Insight

Yaron Eppel
CEO
Mobideo, Inc.

Joseph Ferra
Chief Wireless Officer
Fidelity Investments

Joe Huang
Sr. Principal, Mobile Platform
Oracle

Faraz Syed
CEO & Co-Founder
DeviceAnywhere

** Program & Speakers Subject to Change*

Mobile Money Track

SPONSOR: Syniverse Technologies

Wednesday, October 6 1:00PM – 5:15PM
Room 2006

As mobile merges with banking, credit cards, virtual currencies and stored value, the consumer's potential options for payment for both virtual and actual goods via wireless expand. But still the issues of security, consumer confidence and vendor support remain. The Mobile Money Track will uncover the preferred payment facility the consumer will choose to purchase items via their mobile phone. The track will also address the latest trends in mobile banking and reveal how financial institutions view the mobile phone as a product enabler, a communication tool, a customer relationship management device, or all, or none of the above.

Payment Choice: Cash, Credit or Mobile?

1:00 PM — 2:15 PM

Payments over the phone has been talked about for over a decade, and every year the multiple technologies enabling mobile payment get more refined and more broadly available. These panelists have been selected for their influence on the transaction. Each has created products which use a mobile phone to transact faster, but similarly to, the method customers are familiar with when they pull out their wallets. This discussion will highlight a year of big announcements and major trials worldwide.

MODERATOR:

James van Dyke
President and Founder
Javelin Strategy & Research

SPEAKERS:

Osama Bedier
VP Platform, Mobile & New Ventures
PayPal

Joyce Chen
Sr. Product Manager
Discover Network

Geoff Iddison
Group Executive, Ecommerce & Mobile
MasterCard

Dave Wentker
Head of Mobile Contactless Payments
Visa, Inc.

Currencies – Mobile Cash

2:30 PM — 3:45 PM

The gold standard and the green back may take a back seat in the next generation of payments. Panelists are from innovative companies that are pushing the envelope in using the mobile phone and the internet for payments. Their processes over the phone are efficient and easy, and have fewer touch points back to the traditional "green cash" settlement. Discussion will surround trends in consumer uptake, breadth of market adoption and regulation. Expectations for growth in this arena for the next 6-18 months will be discussed.

MODERATOR:

Jacqueline Chilton
Partner
Glenbrook Partners LLC

SPEAKERS:

Jay Emmet
General Manager
OpenMarket

Ron Hirson
SVP Marketing & Business Development
BOKU, Inc.

Frederick M. Joyce
Partner
Venable LLP

Steve Klebe
Vice President, Business Development and Strategy
BilltoMobile

David Marcus
Founder & CEO
Zong

NFC-Near Field Communication

4:00 PM — 5:15 PM

The hot topic is the chip and what can be done with it. Stickers, Add Ons, Embedded—all formats have been out in the world of wireless for a number of years. These invited panelists represent the NFC ecosystem and will highlight key points in the system that will be leveraged and the key areas of efficiencies and growth we should expect in the near term. General security issues and standards issues will be addressed among the experts on this panel. Case studies of successful pilots and launches will be presented.

MODERATOR:

Randy Vanderhoof
Executive Director
Smart Card Alliance

SPEAKERS:

Anthony Belpaire
Vice President Mobile Wallet Service
Alcatel-Lucent

Paula Berger
Executive Director
NFC Forum

Jean-Louis Carrara
VP
Gemalto

Philippe Martineau
EVP NFC Business Line
Inside Contactless

Mobile Retail Track

Wednesday, October 6 1:00PM – 5:15PM
Room 2008

Whether receiving relevant product promotions while on the go, conducting product comparisons while browsing in-store or making a payment at the register, the mobile phone is fast becoming an invaluable shopping tool. The Mobile Retail Track will spotlight the innovative ways in which brands, retailers, advertisers, banks and credit card companies are leveraging the mobile channel's unique capabilities to engage consumers while they are within the various stages of the purchase cycle. Special emphasis will be given to the obstacles the mobile retail sector faces and how they may be overcome.

mRetail: Engaging Consumers via Mobile

1:00 PM — 2:15 PM

Forward-thinking brands and retailers understand that the opportunity to engage consumers via the mobile channel doesn't end once they enter brick-and-mortar stores, but successful offerings must go beyond mere novelties to enable truly productive apps and services. This session will explore the ways in which the various stakeholders can coordinate their efforts to enhance the role of mobile in the user's in-aisle shopping experience. This session will also expose the emerging opportunities for mobile-enabled extended packaging, consumer self-scanning & product research, social networking and shopping-focused smart phone apps.

MODERATOR:

Casey Chroust
EVP, Retail Operations
Retail Industry Leaders Assn.

SPEAKERS:

Mohammad Khan
President and Founder
ViVOtech

Frank Riso
Senior Director, Global Retail Solutions
Motorola, Inc.

Robert Russell
Director - Mobility Product Management
AT&T

Evan Tana
Director, Product Management
shopkick

Commerce at Transaction Point

2:30 PM — 3:45 PM

Mobile Commerce has two aspects: enabling mobile solutions at the point of sale in brick-and-mortar stores and bringing mobile wireless internet shopping via storefronts. This session will discuss the benefits and challenges of educating consumers to reach for the wireless device instead of cash or plastic when they go to check out at a store.

MODERATOR:

Steve Mott
Principal
BetterBuyDesign

SPEAKERS:

Marty Beard
President, Sybase 365
Sybase

Wences Casares
Founder, Co-Chief Executive Officer and Director
Bling Nation

Dom Morea
SVP and Division Manager, Mobile Commerce Solutions
First Data

Dr. Siva G. Narendra
CTO
Tyfone

Mobile Marketing & Promotion

4:00 PM — 5:15 PM

Mobile marketing spend is set to rise 124% from 2010 to 2011 and every day, users are consuming more and more media through their mobile devices. With the increase in mobile media consumption, there are more and more opportunities for advertisers to reach consumers and for publishers to monetize their mobile content. There are many entry points into mobile marketing and advertising. They range from simple initiatives like SMS text-to-win campaigns to holistic mobile programs which include everything from SMS to WAP sites to display and banner ads to branded mobile applications. Additionally mobile video provides the perfect platform to build brands through the creation of content as opposed to the sponsorship of content. Rich media in mobile is a convergence of traditional media, branded advertising and technology. Come learn from this panel all of the facets that marketers need to understand to create truly unique mobile user experiences.

MODERATOR:

Rajeev Chand
Senior Equity Research Analyst, Wireless
Rutberg & Company

SPEAKERS:

Ivan Braiker
Chief Executive Officer
Hipcricket Inc.

Michael Chang
CEO & Founder
Greystripe

John David Heinsen
President
Bunnygraph Entertainment

Chevon Hicks
President/Creative Director
Heavenspot

Michael O'Brien
SVP, Business Development
Syniverse Technologies, Inc.

Jack Philbin
Co-Founder and President
Vibes Media

** Program & Speakers Subject to Change*

Location Based Services Track

SPONSOR: Syniverse Technologies

Thursday, October 7 1:00PM – 5:15PM
Room 2006

From Location Based Advertising to geotagging to smart vehicles, technical advances are enabling new levels of location functionality and unlocking the door to a vast array of advanced mobile products and services. Still, obstacles to true integration remain. The Location Based Services Track will explore the challenges of fully leveraging location information for the benefit of consumers and enterprise users and the specific strategies for overcoming them.

LBA– Location Based Advertising

1:00 PM — 2:15 PM

Advertising success has always been measured on consumer response. Linking location with key consumer demographic and interest areas has been shown to increase effectiveness. Advertising messages delivered via a mobile phone—never far from the subscriber's reach—get very effective very quickly. These innovative companies will review their state-of-the-art technologies behind their respective platforms that deliver advertising messages to consumers.

MODERATOR:

Dev Khare
Partner
VenRock

SPEAKERS:

Fred Boos
President
RocketBux

Rip Gerber
President & CEO
LOC-AID Technologies, Inc.

Alistair Goodman
CEO
Placecast

Kate Imbach
VP, Marketing
Skyhook

Lisa Peterson
Director, Mobile Solutions Marketing
Neustar

Geo-Tagging and Geo-Coding

2:30 PM — 3:45 PM

Many consider geo-tagging and geo-coding to be the next great growth area in mobile programming enhancements. Mobile phones and their applications keep speeding up and improving consumer experiences. Location no longer has to be typed into specific applications. Meta data and lat/long can be derived via GPS then layered on top of photos, maps, posters retail establishments, etc., effectively anywhere. Blogs, social networking and internet searches are the first movers here. The panelists will discuss just how valuable location information can be for the consumer experience and how their respective products enable the consumers to experience.

MODERATOR:

Lee Daniels
President
Daniels Consulting

SPEAKERS:

Steven Citron-Pousty
API Product Manager
deCarta

Jim Garrett
CEO and Chairman
Kudzu Interactive

Robert Gourdine
Marketing Director
NAVTEQ

Brian Knapp
Chief Operating Officer
Loopt

Krishna Vedati
SVP and GM of Mobile
AT&T Interactive

Smart Vehicles

4:00 PM — 5:15 PM

Vehicles are much more intelligent now than when they first got seat belts and power windows. When it comes to our expectations of our vehicles' capabilities we are, well, "Recalculating." Drivers are familiar with navigation tools now. Yet these same map and navigation providers are enabling a next generation of "Intelligent" on top of those technologies. Voice activation command and voice communication via wireless of former text only applications provide safe and effective commuting time.

MODERATOR:

Jim Baker
Managing Partner
Xenventure

SPEAKERS:

Noam Bardin
CEO
Waze

Sven Beiker
Executive Director, Center for Automotive Research
Stanford University

Bryan Mistele
CEO
INRIX

Brian Radloff
Director, Embedded Solutions, Mobile Speech
Nuance Communications

Mobile Health Track

HONORARY SPONSORS: Qualcomm Wireless Health, ATA, wi-fit, Wireless-Life Sciences Alliance

MEDIA SPONSOR: InformationWeek

Thursday, October 7 1:00PM – 5:15PM Room 2008

State of the art wireless technologies and devices are assisting hospitals, physicians and patients in both improving healthcare management and promoting treatment and wellness from near and far. The Mobile Health Track will highlight the specific barriers to market growth the sector is facing and identify strategies for overcoming them. Case studies of real-world deployments will also be featured.

mHealth Device Review

1:00 PM — 2:15 PM

The case for mobile- enabled healthcare devices has been made, but challenges to adoption remain including the lack of integrated platforms that enable healthcare enterprises to more easily develop, deploy and manage their mobile applications and devices. The session will explore the challenges in utilizing wireless devices in health care, including but not limited to privacy concerns, liability issues, business models, regulatory requirements and provider reimbursement limitations.

MODERATOR:

Azita Arvani
Principal
Arvani Group, International

SPEAKERS:

Alex Brisbourne
President and COO
KORE Telematics

Eleanor Chye
Executive Director, mHealth
AT&T

Vivian Funkhouser
Principal, Global Healthcare Solutions
Motorola Enterprise Mobility Solutions business

Clint McClellan
Senior Director of Business Development, Health & Life Sciences
Qualcomm Incorporated

Jim Pursley
GM Sales & Marketing
GE Healthcare - Aging Services

Remote Monitoring & Diagnostics via Wireless

2:30 PM — 3:45 PM

Mobile technologies are truly invaluable communication tools, linking us with loved ones and co-workers no matter where we roam. Similar wireless connectivity between doctors and patients can enable advanced levels of remote health monitoring for the purposes of more detailed out-patient diagnosis. This session will explore the full potential of wireless as a tool for remotely monitoring patients and disclose the areas for further development including reliability and security of wireless networks, consumer preferences and physician uptake. The role of wireless monitoring to ensure the patient's compliance with physician instructions will also be discussed.

MODERATOR:

Lucy Hood
Executive Director
USC Institute for Communications Technology Management

SPEAKERS:

Kent Dicks
Founder and CEO
MedApps, Inc.

Peter Koo
VP, Strategic Development
Ericsson

Neal Sikka
Emergency Medicine Physician, Director, Section of Innovative Practice
George Washington University Medical Faculty Associates

Richard Strobridge
CEO
Entra Health Systems

Wayne Ward
Vice President, Emerging Solutions
Sprint

mHealth Case Studies

4:00 PM — 5:15 PM

Wireless technologies are playing an increasingly important role in the pursuit of health and wellness through the "always-on broadband to the person" connectivity that mobile technologies provide. This session will provide case studies detailing the most innovative real-world uses of mobile products and services in healthcare today.

MODERATOR:

Lubna Dajani
Executive Advisor
Booze & Co.

SPEAKERS:

Eric Collins
CEO
Montage Systems

Matt Sanders
CEO
iMetrikus, Inc.

John Styers
VP Corporate Strategy & Industry Relations
3Cinteractive

* *Program & Speakers Subject to Change*

State and Federal Policy Track

SPONSOR: CTIA The Wireless Association®

Wednesday–Thursday, October 6–7
Room 2010

Plenary -- Wireless Hot Topics

Wednesday, October 6 1:30 – 3:00 PM Room 2010

Key Federal and state government decision makers will discuss wireless policy hot topics on a range of issues including wireless broadband, network management, consumer protection, and more. Panelists will answer questions about policies they think will best spur wireless' continued growth, innovation, and evolution.

Spectrum Challenges

Wednesday, October 6 3:15 – 4:15 PM Room 2010

The National Broadband Plan called for 300 MHz of new mobile broadband spectrum by 2015 and 500 MHz by 2020. This panel will address the industries innovative approaches to spectrum efficiency, the challenges to the Commission's identified targets for mobile broadband reallocation, additional areas that the Commission can look to reallocate spectrum, and next steps to meet the Nation's wireless broadband needs.

Plenary – Universal Service Reform: USF in the Broadband Age

Thursday, October 7 1:45 – 2:45 PM Room 2010

The FCC's National Broadband Plan has defined a point of inflection for the Universal Service Fund, proposing a transition to a 21st century fund that drives universal broadband deployment and adoption. As the FCC, State Commissions and industry stakeholders embark on this monumental process, this panel will address the policy, regulatory, and legislative challenges and opportunities presented by this transition.

mHealth, Smart Grid and More – The Evolution of Wireless

Thursday, October 7 3:00 – 4:00 PM Room 2010

This panel will bring together business-focused panelists and audience with regulatory and legislative representatives to discuss the opportunities and challenges to the development and implementation of mLearning, mHealth, smart grid and more.

FCBA Seminar West

Tuesday, October 5 9:00 AM – 5:00 PM Room 2012

CTIA The Wireless Association® FCBA FEDERAL COMMUNICATIONS BAR ASSOCIATION

CTIA and the Federal Communications Bar Association will hold a one day continuing legal education seminar in conjunction with the CTIA ENTERPRISE & APPLICATIONS™ 2010 Show. The seminar will focus on emerging wireless issues including: the venture capital outlook; smart grid challenges and opportunities; privacy issues today and tomorrow; and the national broadband plan.

SPEAKERS WILL INCLUDE:

Rebecca Arbogast, Stifel Nicolaus; David Blumberg, Blumberg Capital; Anita Stephens Graham, Opportunity Capital Partners; Greg Widroe, Media Venture Partners; Kevin Bankston, Electronic Frontier Foundation; Mary L. Brown, Cisco Systems, Inc; Commissioner Dian Grueneich, California Public Utilities Commission; Blair Levin, Aspen Institute; Thomas J. Sugrue, T-Mobile USA, Inc.; Paul W. Garnett, Microsoft Corporation; and Rachelle B. Chong, California Public Utilities Commission. Sunil Daluvoy, Google Inc. will be the luncheon speaker.

The FCBA will be applying for four hours of Virginia and California MCLE credit. For additional program information visit the FCBA website at www.fcba.org.

Registration Fee: $195 (FCBA and CTIA Members) / $250 (Non-Members)

PLEASE NOTE: There is a separate registration fee for the CTIA-FCBA CLE Seminar and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The CTIA-FCBA CLE SEMINAR fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

CTIA Partner Events

The CTIA ENTERPRISE & APPLICATIONS™ 2010 convention is pleased to offer a provocative program of visionary and in-depth sessions, conferences and seminars on all aspects of wireless for the strategist, technologist and marketer covering the wireless world.

Pre-Conference • Tuesday, October 5

Andrew Seybold Wireless University .....
More information on page 24

FCBA Seminar West .....
More information on page 22

Enterprise Mobility Boot Camp – Part I.....
More information on page 25

GPS-WIRELESS 2010.....
More information on page 26

Mobile Marketing & Promotion.....
More information on page 27

Mobile Web & Apps World Forum.....
More information on page 28

The Music App Summit @ Billboard Mobile Entertainment Live!, Presented by Logic Wireless.....
More information on page 29

Nokia Developer Day.....
More information on page 30

Day One • Wednesday, October 6

Children & Teens in a Mobile World ..
More information on page 33

Enabling Smart Energy Initiatives through Wireless Infrastructure and Distributed Computing – Presented by Accenture .....
More information on page 32

Enterprise Mobility Boot Camp – Part II .....
More information on page 25

iPad and Tablet Publishing and Entertainment Apps.....
More information on page 31

MobiHealthNews.com Presents: Everywhere Healthcare.....
More information on page 32

Mobile Commerce: Value over Mobile .....
More information on page 33

Day Two • Thursday, October 7

Android Bootcamp .....
More information on page 39

Brighthand Mobile Film Festival .....
More information on page 36

The Disruptive Technologies Perfect Storm: The Next Decade of Innovation .....
More information on page 34

eWEEK Presents: Mobile Security in the Enterprise: Filling in the missing pieces..
More information on page 36

M2M Connected Devices .....
More information on page 35

Mobile Entertainment Forum Panels.....
More information on page 37

Mobile Digital Television: Live, Local TV Keeps Viewers Glued to Programming.....
More information on page 39

The New Consumer Mindset .....
More information on page 39

Open Mobile Solutions Developer Pitch Sessions .....
More information on page 38

PGA New Media Council Presents: "Mobile Content in Motion".....
More information on page 38

The Power of Mobile Cloud Computing ..
More information on page 35

Day Three • Friday, October 8

Android Bootcamp .....
More information on page 39

Mobile Entertainment Forum Panel.....
More information on page 37

WCA Presents: What's Hot in LBS? .....
More information on page 39

Andrew Seybold Wireless University

Tuesday, October 5 9:00 AM – 5:30 PM Room 2002

ANDREWSEYBOLD WIRELESS UNIVERSITY

WIRELESS NOW AND INTO THE FUTURE

Few can comprehend all that has happened in wireless since this time last year and we are only beginning to grasp what is to come. Wouldn't you like to know and prepare for what lies ahead?

At the ANDREW SEYBOLD WIRELESS UNIVERSITY, you will start with a look at where we are today and then proceed into the future of this rapidly changing industry with the most in-depth, up-to-date education in wireless available in a convenient one-day seminar.

Who Should Attend

With a focus on trends, current issues, and the future, this seminar is relevant to professionals across the industry. Of survey respondents for the fall 2009 session, 95% recommend this course: 93% will use what they learned in their current jobs; and 24% had attended more than once.

- Executives and entrepreneurs focused on wireless convergence
- Leaders of companies migrating to workforce mobility
- Business professionals new to wireless
- Technology evaluators and implementers
- Developers of content, applications, devices and technologies

Description

In its 15th year, ANDREW SEYBOLD WIRELESS UNIVERSITY explores complex issues facing wireless mobility by examining the elements – technologies, devices, applications and content.

Andrew Seybold, wireless pioneer, highly regarded wireless industry analyst and acknowledged expert at trend prediction, will lead this seminar in his straightforward, no holds-barred approach in plain language and an engaging style as he tells it like it is.

What You Will Gain

- Knowledge about the industry's trends and issues
- Essential information about current and future technologies, applications, devices and more
- Improved ability to assess facts and make informed decisions
- The ability to identify money-making opportunities
- A competitive advantage

Agenda

Morning Session:
Wireless Technology Update

- Wireless Spectrum
- Wireless Wide-Area Networks: 2G, 3G, 4G and Beyond, LTE, WiMAX, TV White Space
- Wireless Local-Area Networks: Wi-Fi
- Wireless Personal-Area Networks: Bluetooth, Zigbee
- RFID
- Smart Grids

Afternoon Session:
Wireless Markets, Players, Devices, and Futures

- Wireless Markets
- The Players
- The Devices
- Operating Systems and Ecosystems
- Industry Commentary & Predictions

Registration Fee: $375

PLEASE NOTE: ANDREW SEYBOLD WIRELESS UNIVERSITY working binders will be provided onsite only to attendees that have directly registered for this partner event pass; Super Pass attendees will not receive a hard copy of the binder onsite. Super Pass attendees who would like to attend the ANDREW SEYBOLD WIRELESS UNIVERSITY event will be provided a link onsite before and during the session to access a digital copy of the working binder provided by Andrew Seybold, Inc.

PLEASE NOTE: There is a separate registration fee for Andrew Seybold Wireless University and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The Andrew Seybold Wireless University fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

Enterprise Mobility Boot Camp

Tuesday, October 5 **1:00 PM – 6:00 PM** **Part I** **Room 2005**
Wednesday, October 6 **1:00 PM – 5:00 PM** **Part II** **Room 2005/2007**

HOSTED BY: emf The Enterprise Mobility Foundation CTIA The Wireless Association®

MEDIA SPONSOR: FierceMobileIT

The Enterprise Mobility Boot Camp is a two part power session for IT professionals who need unbiased advice and actionable intelligence for building their enterprise mobility strategy and managing their enterprise mobile ecosystem day to day.

Enterprise Mobility Boot Camp Part I:

WORKBOOK SPONSOR: Tangoe

1:00 PM – 2:00 PM:
The Hot Issues of the Day for the Enterprise Mobility
Ask any IT/Telecom professional about the "hot issues of the day" for the mobile enterprise and chances are good that the issue of individual liable vs. corporate liable devices will top the list, we also examine a host of other topics.

2:15 PM – 3:15 PM:
Hands-on Mobile Strategy/Policy Workbook Session
This workbook session will dive deep into all aspects of enterprise mobile strategy and policy. The full range of the mobile lifecycle will be covered including best practices for: procurement, provisioning, device management, application management, service management, security, expense management, help desk, and mobile device retirement/ replacement.

3:30 PM – 4:30 PM:
Mobile Application Strategies (Internal/External)
Building mobile applications for line-of-business purposes can radically improve worker productivity and business processes. The flipside of the topic will also be examined as we explore the issues and opportunities relating to consumer to business mobile applications.

4:30 PM – 6:00 PM:
Hosted Networking Reception

Windows Phone

Enterprise Mobility Boot Camp Part II:

Enjoy the CTIA Keynote and tour the exhibit floor before reconvening for Boot Camp Part II on Wednesday, October 6.

1:00 PM – 2:30 PM:

ANTENNA apperian Global Bay Quickcomm Tangoe visage|mobile

Pitch Fest
Enterprise Mobility Foundation, Managing Director, Philippe Winthrop will challenge top enterprise mobility solution providers to share with you what their customers are saying are the most pressing issues for the mobile enterprise today.

2:30 PM – 3:30 PM: Wireless RAIN
Speed Networking
This exclusive peer-to-peer networking session allows IT professionals to connect in a highly structured networking session led by master networker: Steve Brumer, Founder & CEO of Wireless Rain and Enterprise Mobility Foundation, Advisory Board Member.

3:30 PM – 5:00 PM: Movêro Technology
Ask the Experts
Bring your questions to the experts. Enterprise Mobility Boot Camp concludes with a highly interactive panel and break-out session with leading industry analysts:

Andrew Brown, *Director, Wireless Enterprise Strategies,* **Strategy Analytics**
Maribel Lopez, *Principal and Founder Market Strategies,* **Lopez Research**
Carrie MacGillivray, *Program Manager, Mobile Enterprise and Telecom Group,* **IDC**
Gene Signorini, *VP Anywhere Enterprise,* **The Yankee Group**

Registration Fee: $375

SPONSORED IN PART BY:

ANTENNA apperian Global Bay Movêro Technology Quickcomm Tangoe visage|mobile Wireless RAIN Windows Phone

This must attend event is hosted by The Enterprise Mobility Foundation in partnership with CTIA. The Enterprise Mobility Foundation (EMF) is an independent think-tank committed to educating businesses on workforce mobility. The Foundation's mission is to be the global community builder and the leader in showcasing the value of successfully deploying and managing mobility solutions within organizations in the public and private sector. The EMF is managed by former industry analyst Philippe Winthrop, who brings 15 years experience in helping both vendors and end users pragmatically assess IT and Telecom needs and trends. For more information, visit www.theemf.org.

PLEASE NOTE: There is a separate registration fee for Enterprise Mobility Bootcamp and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The Enterprise Mobility Bootcamp fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

GPS-WIRELESS 2010

Tuesday, October 5 9:00 AM – 6:00 PM Rooms 2007/2009

GPS-WIRELESS 2010, brings the top executives together to discuss the important and converging navigation, location-based services, fleet and asset management for enterprise markets, online portal, personal location and homeland security markets. The location-based services ecosystem includes location itself, navigation (route-guidance), real-time traffic information, local search, social networking, and entertainment and recreation. Find out what consumers want and which markets have the best chance of succeeding. The top industry leaders will assess where these markets are going—and how you can compete. Go beyond the hype and gain critical market information at GPS-WIRELESS 2010. Go to www.gps-wireless.com for more information.

GPS-WIRELESS 2010 features:

- More than 20 speakers from the top companies
- The industry's finest 1-1/2 hour hosted networking reception with tabletop exhibits
- Allows registered attendees to attend not only GPS-Wireless, but all CTIA keynotes, exhibit floor access and free events.

GPS-WIRELESS offers hours of networking time, including our industry-best hosted reception that will offer informative tabletop displays. Companies looking to increase their market exposure should contact us as soon as possible for sponsorships. For the last 13 years, we have sold out our sponsorships—and tabletop space is limited!

Questions that will be answered when you attend GPS-WIRELESS 2010:

- How will "free" navigation services affect the industry... see what the experts say!
- How does map data need to evolve to continue to be the core of LBS?
- What will shape the future LBS Value Chain and how will it be impacted by consolidation?
- The battle for the consumer mindshare for navigation—will it be the handset or the Portable Navigation Device (PND)?
- Learn the role of the retailer in shaping the future of LBS
- How does an LBS Developer win in an Open Access world?
- What will be the next LBS market segment that will grow? Location-Based Advertising?
- What are the online portals doing to grow the market?
- Asset monitoring... what companies/technologies will dominate?
- How are fleet and asset management providers driving markets? How is insurance telematics playing a role?
- What's new with Portable Navigation Systems' markets?

Registration Fee: $395

PLEASE NOTE: There is a separate registration fee for GPS-WIRELESS 2010 and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The GPS-WIRELESS 2010 fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

Mobile Marketing and Promotion

Tuesday, October 5 9:00 AM – 5:30 PM Room 2004

CTIA Mobile Marketing & Promotion

The Evolution of Marketing
Mobile Advertising Comes Alive in 2010

The recent economic downturn appears to be thawing its icy grip on overall business growth and development especially in the wireless sector. As investment in the next wave of emerging technologies commences, brands and advertisers will finally be able to devote more focused attention to maximizing the marketing potential of the mobile device.

In the history of the digital age, never before has the explosion of available content, increasingly convenient mobile access, and growing consumer demand combined at greater proportions to provide for advertisers a seemingly endless market for their products and services. It is a time that an incredible number of companies (retailers, financial institutions, consumer goods) are increasingly incorporating mobile into their marketing strategy, enabling a personalized, real-time consumer experience and driving both sales transactions and customer loyalty. Those avoiding mobile or slow to embrace the medium face incredible hurdles in order to keep pace with not only their competitors, but also their consumers.

Mobile Marketing & Promotion Keynote Address

The Mobile Opportunity – Perspectives from a Network that is also a Brand

William Hsu
Chief Product Officer
AT&T Interactive

William Hsu, Chief Product Officer at AT&T Interactive, is responsible for overall product strategy and performance across consumer, advertiser, and publisher products. Since joining AT&T Interactive, Mr. Hsu has been instrumental in leading the growth of the company's publisher network which reaches more than 70 million unique visitors each month[1], and has contributed to the overall product and ad strategy for its flagship mobile app, YPmobile, as well as the direction and launch of buzz.com and YP.COM, the new YELLOWPAGES.COM.

Prior to AT&T Interactive, William founded BuildPoint—a leading B2B marketplace for commercial construction services—that was acquired in 2004. Will's product leadership also includes leading eBay's local initiatives and product marketing & strategy at Spot Runner.

William has degrees from Stanford University and The Wharton School at University of Pennsylvania.

[1]comscore June 2010 YP.COM Network - Potential Reach Unified Measurement

Additional sessions include:

- Aligning Brand Interest with Mobile Opportunity
- Marketing with Mobile Applications
- Strategic Thinking in Mobile Marketing
- Understanding the Mobile Advertising Value Chain
- Utilization of Key Advertising Delivery Channels

Registration Fee: $349

SPONSORS: at&t ORACLE

PLEASE NOTE: There is a separate registration fee for Mobile Marketing and Promotion and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The Mobile Marketing and Promotion fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

Mobile Web & Apps World Forum

Tuesday, October 5 9:00 AM – 5:00 PM Room 2006

Mobile web&apps worldforum

DIAMOND SPONSORS: myriad impetus Pioneers in Outsourced Product Development

GOLD SPONSOR: OpenMarket

Following our standing room only event at International CTIA WIRELESS® 2010, the second Mobile Web and Apps World Forum is being held at CTIA ENTERPRISE & APPLICATIONS™ 2010.

The Mobile Web and Apps World Forum will bring together top professionals from around the globe to discuss the development, deployment, marketing and monetization of mobile applications.

Topics covered will include:

- Mobile Web and Mobile Apps—synergies and strategies
- Operator strategies—success stories and insights
- APIs (Carriers and Devices)
- Advertising, marketing and monetization strategies
- Social media and viral marketing strategies for Mobile Apps
- Mobile Web Widgets (Google/Opera and others)
- 'Apps as a platform'—The wider impact of apps
- Content monetization through apps
- Deployment of Apps on multiple platforms
- VC's and investment for Mobile Apps
- Lessons from iPhone, Android, Windows Mobile, Nokia, Opera and RIM deployment

SPEAKERS:
Barnes and Noble, NBA Digital, Univision, Myriad Group, Impetus, OpenMarket, XMG Studio, Pearson, futuretext... *and many more!*

For the latest agenda and speaker lineup, please visit www.mobilewebandapps.com

Who attends?

Third party developers (web and mobile), content developers and creators, mobile operators, online retailers, media outlets, internet/mobile marketers, entertainment companies and content providers, investment & commercial banking, venture capitalist, ISP's, advertising agencies, billing and payment companies, brand managers, user interface architects, consultants. Sponsorship opportunities are still available, please contact Larry Lockhart at 727-388-9849 or email Larry@nextvisionmedia.com.

Registration Fee: $395

PLEASE NOTE: There is a separate registration fee for Mobile Web & Apps World Forum and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The Mobile Web & Apps World Forum fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

The Music App Summit @ Billboard Mobile Entertainment Live!
Presented by Logic Wireless

Tuesday, October 5 9:00 AM – 5:00 PM Room 3000–3004 www.MobileEntertainmentLiveFall.com

Music is behind some of the most popular apps downloaded on today's smartphones. But which are the best of the best? What new music apps, technologies and companies are setting the stage for tomorrow's successes? This is the place to discover all this and MORE.

KEYNOTE PROGRAM

Our keynote program will begin and end the day with a mix of intimate interviews, dynamic presentations, and eye-opening demos as the leaders in the mobile entertainment field take the stage.

9:00 – 10:30

Morning Keynote Speakers

Janus Friis, *Co-founder,* **Rdio, Skype, Kazaa, Joost, Atomico Ventures**
Christy Wyatt, *VP, Software Applications and Ecosystem,* **Motorola Mobile Devices**
Matt Murphy, *Partner,* **Kleiner Perkins Caufield & Byers**
Ge Wang, *Co-Founder, CTO, and Chief Creative Officer,* **Smule** and *Assistant Professor,* **Stanford**

11:15 – 12:00

Panel: The New Music Industry

This panel compiles the forward-thinking execs from the worlds of the major label, touring biz, management companies and more discussing recent mobile deals they've done and why, what they're looking for in a developer partner, and how their content licensing strategy is changing to meet the demands of today's ecosystem.

MODERATOR:
Bill Werde, *Editorial Director,* **Billboard**

SPEAKERS:
Rick Farman, *Co-Founder & Partner,* **Superfly Presents**
Kristin Hersh, *Artist,* **Throwing Muses** *and founding member,* **CASH Music**
Jack Isquith, *SVP Digital Music,* **Warner Bros Records**
Matt Kozlov, *VP, New Products & Services, Global Digital Business,* **Sony Music**
Jordan Kurland, *Owner,* **Zeitgeist Artist Management**

1:15 – 1:45

Artist Keynote

Dave Stewart, *Producer, Solo Artist and Mobile Music Consultant/Evangelist*

1:45 – 2:45

Innovators Showcase

Five start-up companies will offer a glimpse into the new technologies, business models and entrepreneurs that will shape the music and mobile landscape in the year ahead.

ADVISORS:
Tim Chang, *Principal,* **Norwest Venture Partners**
Ted Cohen, *Managing Partner,* **TAG Strategic**
Alan Goodstadt, *Partner,* **Redwood Capital**
David Kusek, *VP,* **Berklee College of Music**
Paul Vidich, *Media Consultant and Independent Advisor:* **ReverbNation, MediaNet, BrightCove, Melodeo**
Brian Zisk, *Co-founder,* **SFMusicTech, Collecta and Future of Music Coalition**

3:15 – 4:00

Panel: On the Horizon

The panel examines the new technologies, business models and marketing strategies shaping the future of mobile music and entertainment.

MODERATOR:
Antony Bruno, *Exec. Director of Digital/Mobile Content & Programming,* **Billboard**

SPEAKERS:
Anand Iyer, *Senior Project Manager,* **Windows Phone 7 Team, Microsoft**
Joe Kennedy, *CEO,* **Pandora**
Dev Khare, *VP,* **Venrock**
Kevin Than, *VP of Corporate Business Development,* **Twitter**
Konny Zsigo, *President,* **Wireless Developer Agency**

4:30 – 5:00

Afternoon Keynote Speakers

Jim Lucchese, *CEO,* **The Echo Nest**
Evan Harrison, *EVP,* **Clear Channel Radio,** & *President,* **Clear Channel Radio Digital**

PLUS…Demos from all Music App Award Finalists and Winners!

Immediately Following:

Billboard BASH SPONSORED BY iheartradio

REGISTER EARLY AND SAVE!

www.MobileEntertainmentLiveFall.com

Registration Questions Contact:
Lisa Kastner
646-654-4643
LKastner@Billboard.com

For Unique Sponsorship Opportunities Contact:
Matt Carona
646-654-5115
MCarona@Billboard.com

PRESENTING SPONSOR: Logic
BASH SPONSOR: iheartradio
CONFERENCE SPONSORS: Beyond, MOZES

PLEASE NOTE: There is a separate registration fee for The Music App Summit @ Billboard Mobile Entertainment Live!, Presented by Logic and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The Music App Summit @ Billboard Mobile Entertainment Live!, Presented by Logic fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

Nokia Developer Day

Tuesday, October 5 9:00 AM – 5:00 PM Room 2003

NOKIA at&t

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Join Nokia and special guest AT&T for Nokia Developer Day, an information-packed conference and hands-on workshop. You will take away concrete information on how to easily develop for the world's largest community of app-purchasing mobile consumers and tap into their downloading appetite through Ovi Store where downloads in 180 countries—including the U.S.—now exceed 1.7 million daily.

Prepare for this intense developer day where you will learn:

1. How to use the new Nokia Qt SDK to create advanced native apps for Symbian^3 devices like the Nokia N8
2. How to use the Nokia Web SDK to easily develop Web Apps using industry standard IDEs like Aptana
3. The essentials of great UI design on Symbian^3
4. How to publish your app to Ovi Store faster and without signing fees
5. About compelling new incentives for developers to publish to Ovi Store
6. Why your apps on Symbian^3 devices are important to AT&T
7. How local developers have already achieved success on Ovi Store

Network with other mobile developers and meet your local Nokia technical, marketing, and business development representatives to get the information and make the contacts you need to make your application even more successful.

Nokia Developer Day is free of charge, but please register as soon as possible—seats are limited. The workshop will be held on Tuesday, October 5, from 9:00 AM – 5:00 PM at Moscone West (San Francisco), with a networking cocktail reception at the close of the session. All registered attendees will receive a special bonus developer's kit while supplies last.

About Forum Nokia

Nokia's global developer program, Forum Nokia connects developers to tools, technical information, support, and distribution channels they can use to build and market applications around the globe. From offices in the U.S., Europe, India, Japan, China, and Singapore, Forum Nokia provides technical and business development support to developers and operators to assist them in achieving their goal of successfully launching applications and services to consumers and enterprises. More information is available at www.forum.nokia.com.

About AT&T

AT&T Inc. is a global leader in communications and a recognized leader which consistently provides innovative, reliable, high-quality products and services and excellent customer care. Today, our mission is to connect people with their world, everywhere they live and work, and do it better than anyone else. We're fulfilling this vision by creating new solutions for consumers and businesses and by driving innovation in the communications and entertainment industry. Learn more at http://developer.att.com

iPad and Tablets Publishing and Entertainment Apps

Wednesday, October 6 11:00 AM – 6:00 PM Room 2020

iPad and Tablet
Publishing and Entertainment Apps

There is no doubt that the iPad has caused a tremendous amount of interest for the publishing and entertainment industries, and with several new tablet computers expected to launch from companies like Google and HTC, HP, Dell and others, potential for publishers and entertainment companies to capitalize on this "third device" will never be greater. The iPad and Tablet Conference will address the extraordinary opportunities available in the tablet computing market.

For publishers, the iPad business model is widely seen to be a savior for the book and magazine industry. Publishers can charge a premium for books and magazines on iPad since it encourages deeper engagement with the customer. The very meaning of a 'book' can be redefined since the customer engagement now incorporates multimedia and community.

For entertainment companies, iPad and Tablets offer a new platform for creating great consumer experiences, monetizing existing services and creating new services.

The iPad and Tablets: Publishing and Entertainment event will be set in a relaxed, interactive atmosphere and will address the latest opportunities and obstacles including:

- Market research and trends
- Real life case studies on iPad development and launches
- Consumer usage habits
- Impact on publishing and games industries
- Ad-funded, sponsored and premium iPad apps
- Business and revenue models for iPad and Tablets
- Incorporating multimedia and community to iPad and Tablets
- Best practices in deployment
- Relative merits and demerits of tablet platforms

And MUCH more!

SPEAKERS:
Tanya Hall, **Greenleaf Book Group**
Robert Samuels, **The New York Times**
Joe Lalley, **MTV Networks**
Ajit Jaokar, **futuretext**
Remco van den Elzen, **Distimo**
Sena Gbekor-Kove, **imKon**
William Volk, **PlayScreen**
Dennis Bournique, **WapReview**

and more!

For additional information visit www.ipadandtablets.com
For sponsorship opportunities contact Ajit Jaokar at Ajit.Jaokar@futuretext.com

Registration Fee: $295

PLEASE NOTE: There is a separate registration fee for iPad and Tablets Publishing and Entertainment Apps and it is NOT included in the CTIA VIP, Conference, Daily, Individual Session or Exhibits registration packages. The iPad and Tablets Publishing and Entertainment Apps fee includes admission to all CTIA Keynote Sessions, Exhibit Floor and all free partner events. Please see www.ctiashow.com/reg for details.

Enabling Smart Energy Initiatives through Wireless Infrastructure and Distributed Computing – Presented by Accenture

Wednesday, October 6 12:30 PM – 4:00 PM Room 2003

accenture
High performance. Delivered.

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Smart energy programs will enable meters, grids and homes/buildings to become more observable, controllable, automated and integrated. Wireless communications and distributed computing solutions are key components of these programs. During this session, you will hear about the importance of the wireless ecosystem and distributed computing that enable smart energy programs.

MobiHealthNews.com Presents: Everywhere Healthcare

Wednesday, October 6 11:00 AM – 5:00 PM Room 2012

mobihealthnews

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Healthcare costs for employers are going up… and up. Meanwhile, demand for healthcare is at an all-time high and our hospitals and care providers are stretched thin. Mobile health apps, devices and services promise to help break the cost curve. Attend Everywhere Healthcare to discover how wireless is changing healthcare.

Five things you will learn at Everywhere Healthcare:

- How the enterprise has adopted wireless-enabled personal health devices and mobile apps to help get their workforce in shape and making healthy decisions.
- Which mobile service providers are ahead of the trend and working to create mobile services that target the massive Aging Baby Boomer market with easy-to-use mobile health services.
- Ways to ensure your mobile health service is secure and HIPAA compliant.
- How investors view the mobile health market and the challenges they see for this new frontier for wireless.
- Which business models are working for mobile health companies?

MobiHealthNews Presents: Everywhere Healthcare will provide attendees with perspectives on the mobile health market from investors, technologists, care providers, analysts and mobile operators.

Children & Teens in a Mobile World - A Be Smart. Be Fair. Be Safe. Responsible Wireless Use Event in partnership with Common Sense Media

Wednesday, October 6 2:00 PM – 5:15 PM Room 2000

OPEN TO ALL REGISTERED CTIA ATTENDEES!

PRESENTED BY: CTIA The Wireless Association® be smart. fair. safe responsible wireless use IN PARTNERSHIP WITH common sense media

2:00 PM – 2:30 PM

Presentation: Teens & Mobile Phones

2:30 PM – 3:45 PM

Panel I: Generation Wireless with Common Sense Media

CTIA has partnered with Common Sense Media to find out how kids are using or misusing wireless technology by hearing it straight from children and educators. Participants will discuss how they use their wireless devices for school, play and safety and address issues of inappropriate use such as texting while driving and cyberbullying. Participants will be asked how school policies should be modified to incorporate wireless technology and what can be done to encourage appropriate wireless use.

4:00 PM – 5:15 PM

Panel II: Be Smart Policy: Teach, Tech and Tools

Policymakers, subject matter experts and wireless industry representatives will discuss responsible use and education policies for wireless devices, including the policy implications of texting while driving, "sexting", and privacy. Panelists will review the current market and trends for content filters and monitoring applications, content ratings, and privacy settings. Panelists will also discuss industry best practices for LBS, mobile financial services and advertising to generate awareness among application developers.

Mobile Commerce: Value Over Mobile

Wednesday, October 6 11:00 AM – 5:00 PM Room 2018

SYBASE | 365 MOBILE SERVICES

OPEN TO ALL REGISTERED CTIA ATTENDEES!

This session will feature key topics in transferring value digitally over mobile phones.

Synopsis

Similar to the introduction of e-commerce, mobile commerce adoption has been met with resistance, challenges, and vast opportunities. Today, there are over 400 million mobile commerce users worldwide who enjoy the convenience of their mobile devices to manage finances, interact socially, pay for goods and services, and remit funds.

This session will provide insights to mobile commerce strategies, market-proven experiences and deployments, and networking opportunities with top mobile commerce innovators, thought-leaders, and experts.

Please join us for a full day session to learn from and interact with top-tier mobile commerce experts from around the world, who are paving the way for all mobile subscribers to be able to use their mobile devices as their wallet.

The Disruptive Technologies Perfect Storm: The Next Decade of Innovation

Thursday, October 7 11:00 AM – 5:20 PM Room 2000

PRESENTED BY: OVUM

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Speakers: Jonathan L. Yarmis, *Senior Research Fellow,* **Ovum**
Jan Dawson, *Chief Telecoms Analyst,* **Ovum**
Mike Sapien, *Principal Analyst, Enterprise,* **Ovum**

Disruptive Technology Perfect Storm **11:00 AM – 11:50 AM**

The technology industry has been characterized by decade-long waves of innovation, from the mainframe, mini and PC to the Internet explosion of the last decade. The current wave of innovation, however, is unparalleled in its breadth and pace. The simultaneous explosion of social, mobile and cloud is bringing about a "perfect storm" of innovation that has profound implications for every business and every industry. This session will explore each of the threads of innovation but, more importantly, how they serve to amplify and reinforce each other in ways often unappreciated by the adherents of any one of the waves.

Mobile Device Scenario **12:30 PM – 1:20 PM**

Almost since the introduction of the original IBM PC, the PC architecture has dominated the client side of the computing equation. Even laptops were really just portable instantiations of the desktop computing metaphor. All that is changing, and explosively. Mobile devices vastly outship PCs of all forms and SmartPhone shipments alone will pass PC shipments in another year or two. New generalized form factors (e.g., tablet) are being introduced and even specialized platforms (e.g., book readers and MP3 players) have gained significant market share. The net result is that the mobile Internet is taking off even faster than the desktop Internet. This session will look at our ever-expanding device options and assess their implication on the broader enterprise market.

Telco 2.0 **1:30 PM – 2:20 PM**

The telecoms industry, like other industries focused on digital infrastructure and services, will face significant upheaval over the coming decade. The ubiquity of broadband IP networks and the rise of a converged software-based application, content and service marketplace means that those involved in different aspects of telecoms will have to contend with considerable disruption and development of value chains, services, business models and competition. This has obvious implications for all aspects of the industry, from the enterprise to providers and on through to regulators. This session will explore the changing landscape and the new enterprise competitive requirements to harness and exploit this landscape.

LTE: On Beyond 3G **2:30 PM – 3:20 PM**

The demand for network speed and capacity is seemingly without end. Next-generation networking technologies are beginning their early deployments. In this session, we'll talk about the impact and take a future view of emerging network technologies. More importantly, we'll look at what applications are enabled as a result and explore use cases that stand out over today's 3G and other current mobile ecosystem solutions.

Global Managed Mobility **3:30 PM – 4:20 PM**

Over a decade ago, mobile telephones entered the enterprise through the back door: employees who could afford mobiles occasionally used them for business; specific business units budgeted for employee devices and then procured them locally; policies surrounding the usage of mobile phones for work were – where they existed at all – haphazard; there was little means of policy enforcement; and in no case were these mobile phones integrated into a business's fixed telephony strategy, let alone its IT strategy. This stands in sharp contrast to other office technologies, such as PCs, faxes and copiers.

Fast forward to the present, and the picture painted above still applies to a majority of businesses, large and small. In short, most companies do not manage their mobile estate as if it were an asset and, therefore, miss out not only on opportunities to save costs, but also on the benefits which a strategic approach to mobile management can bring about.

Google vs. Apple: Platform Battles **4:30 PM – 5:20 PM**

The Microsoft era is coming to an end and, while they continue to exert a strong influence over the enterprise market, emerging powers Google and Apple are forging a battle over the consumer platform that has significant implications for the enterprise, and the industry at large. The new battleground encompasses not just software platforms but devices, application ecosystems and even storefronts, physical and virtual. Understanding the strategies of these two, however, is fraught with uncertainty as roadmaps give way to rumors, products give way to rapid marketplace decisions and consumer sensibilities trump enterprise readiness. This session will look at the motivations of the emerging powers and the implications to the enterprise of the new consumer-oriented onslaught.

M2M Connected Devices Conference

Thursday, October 7 11:00 AM – 1:00 PM Room 2003

OPEN TO ALL REGISTERED CTIA ATTENDEES!

PRESENTED BY: M2M zone ORGANIZED BY: Telecommunications media group

PLATINUM SPONSOR: verizon wireless EVENT SPONSORS: ARICENT KORE nPHASE Telit wireless solutions

MODERATED BY:
Robin Duke-Woolley, *CEO & Founder,* **Beecham Research**

In this M2M conference we will review the latest in technology and market opportunity for network—aware devices and the service delivery platforms that support them. We will review the blueprints for an array of mobile and wireless network standards that enable Auto & Fleet, Energy, and TeleHealth innovations. Panelists will analyze the interactivity and interoperability of these networks with remote devices, middleware, and software. We will also highlight how these same set of issues play in the proliferation of "smart" and portable consumer products.

Our panel of experts will underline the determinant values of telecom connectivity packages and service-level agreements by sharing examples from enterprise, municipal, industrial, and commercial deployments.

We encourage you to bring questions for the interactive Q&A at the conclusion of case study presentations. Topics to include:

- Energy – wireless infrastructure for automated meter reading; electronic vehicle charging
- Asset Tracking and Security – telemedicine, heavy industries, and transportation
- Consumer Devices – multimodal tablets, PNDs, E-Readers, cameras
- Automotive Telematics – differentiating GPS, LBS, and OEM diagnostic services
- Service Platforms – evaluating M2M service platforms for customer control

For more details, visit www.m2mzone.com

Content subject to change.

The Power of Mobile Cloud Computing Conference

Thursday October 7 2:00 PM – 3:30 PM Room 2003

ORGANIZED BY: Telecommunications media group

OPEN TO ALL REGISTERED CTIA ATTENDEES!

MODERATED BY:
Bill Rubino, *Principal Analyst,* **ACG Research**

Cloud Computing technologies are quickly becoming a tremendous force in the mobile ecosystem, offering almost unlimited storage and processing power. The number of mobile apps is already growing at exponential rates, and industry analysts predict enormous growth for this sector, almost 30% in the next five years. Our experts share insights from their immersion in this explosion, and explain the benefits of Cloud Computing and outsourced network infrastructure. In this 90-minute conference we'll explore issues critical to successful network operations, including:

- What synergies exist between Cloud Computing and Mobile Apps?
- Which mobile operators offer Cloud services?
- Globally, are there regional markets adopting Cloud more quickly than others?
- What new business models may emerge through Cloud Computing?
- What factors might limit the growth of this emerging sector?

We encourage you to bring questions for the interactive Q&A at the conclusion of case study presentations.

For more information, visit www.telecomengine.com.

Content subject to change.

Brighthand Mobile Film Festival

Thursday, October 7 11:00 AM – 1:00 PM Room 2018

Brighthand™
Smartphone News & Reviews

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Brighthand.com will host its second Brighthand Mobile Film Festival, showcasing the best and brightest in made-for-mobile content.

This time we're taking a hard look at mobile hard (and soft) selling tactics by showcasing some of the most creative Web and mobile advertising campaigns. The Internet has rewritten the rules of mass media and mobile adds a new dimension to in-your-face marketing. Attendees will have the opportunity to vote for their favorite clips using their mobile phones. Brighthand will also present a panel discussion on key trends in smartphone mobile marketing.

Brighthand.com is part of the TechnologyGuide family of product review and evaluation Web sites, and a trusted source for everything related to smartphones. The site generates more than 1.4m page views and attracts more than 668,000 unique visitors per month. TechnologyGuide provides a range of consumer and business information for influencers and buyers of technology products, and serves more than 8.3m unique visitors per month. It also includes a number of highly-active discussion boards, delivering more than 3,600 posts and peer reviews each day.

www.brighthand.com

eWEEK Presents: Mobile Security in the Enterprise: Filling in the Missing Pieces

Thursday, October 7 11:00 AM – 1:00 PM Room 2005

eWEEK

OPEN TO ALL REGISTERED CTIA ATTENDEES!

The mobile enterprise needs to assure its customers security, compliance and privacy. As employees become dispersed and access the corporate networks via smartphones, tablet devices and other mobile platforms, the need to build a security foundation from the start is vital. This panel will investigate the issues surrounding mobile security, discuss approaches to creating a secure IT environment for mobile workers and customers and provide attendees with a roadmap to building a mobile secure platform in their business operations. Special research on the most important security aspects of mobile computing will be presented at this panel.

MODERATOR:
Eric Lundquist, *Vice President,* **Ziff Davis Enterprise**

SPEAKERS:
Susan Nunziata, *Editor-in-Chief,* **CIO Insight**
Guy Currier, *Research Director,* **Ziff Davis Enterprise**

The New Consumer Mindset

Thursday, October 7 3:00 PM – 5:00 PM Room 2018

GfK

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Through extensive research conducted broadly across the consumer market GfK has found a new and emerging consumer mindset related to the use of technology products and services generally. This new mindset promises to change the purchase decision-making dynamics associated with new technology products and services – particularly in the wireless communications category.

Gone are the days of the "gee whiz" purchase and ushered in are the days of the "so what" can this do for me purchase. This emerging mindset is not simply about justifying spending money in challenging economic times. Instead, this is about a new found maturity in expectations about what the next generation wireless services should be and why they are important.

Mobile Entertainment Forum Panels

Thursday, October 7 1:00 PM – 6:30 PM Room 2012

OPEN TO ALL REGISTERED CTIA ATTENDEES!

MEF SMART ENABLERS

Accelerating the Growth of Next-Generation Media Services
1:00 PM (90minutes – panel/Q&A)

Carrier enabling services are not new and already exists in the shape of wholesale airtime resale to MVNOs, bulk SMS billing, premium SMS and third-party billing. These services are now being joined by a richer suite of enablers with further capabilities. In fact, 50 percent of respondents to the MEF enablers survey expect the use of smart enablers to increase their revenues by up to 25 percent. Yet there remains a lack of understanding about how to implement a coherent enabler strategy to grow these revenues.

This presentation will draw from the MEF industry-wide collaboration into the role of smart enablers, which produced a Guide to Enabling Services, authored by Ovum and available to delegates attending the presentation.

http://www.m-e-f.org/initiatives/enablers

MEF M-COMMERCE GUIDE

Receive a Copy of the MEF M-Commerce Guide and Review Your Commerce Options
3:00 PM (90minutes – panel/Q&A)

The $36bn global mobile media industry is largely built on micropayments and MEF's M-Commerce Guide expands this opportunity to the retail and content industries. This comprehensive resource brings together expert content and analysis, showing all the different ways that the mobile device can be used to enable commerce for content, services and products consumed both on and off the device.

Attend this panel to receive a copy of the guide and hear leading industry experts discuss M-Commerce options, case studies and best practices.

http://www.m-e-f.org/initiatives/m_commerce

MEF BEST PRACTICE FOR SUCCESSFUL M-COMMERCE STRATEGIES

Bricks & Mortar M-Commerce & mCRM Options
5:00 PM (90 minutes – panel/Q&A)

MEF will explore how to intelligently integrate the retail store to drive mobile transactions without impacting the existing IT footprint. In addition, panelists will discuss retail demand point-of-decision solutions to engage the shopper. The MEF M-Commerce guide explores mCRM, loyalty, affinity and commerce options for the modern retailer. This panel will include a deep drive into discussing PoS, Endcap, Affinity, Coupon Clearing Houses and how they are all going mobile.

http://www.m-e-f.org/initiatives/m_commerce

Friday, October 8 11:00AM – 12.30PM Room 2012

MEF LATAM PANEL

The Next Frontier in VAS Revenues
11:00am (90 minutes – panel/Q&A)

With the successful launch of the MEF LATAM Chapter in November 2009, MEF members will provide a detailed overview of the opportunities and implications of doing business in this most dynamic of markets. How should you compare countries for investment and what synergies or differences are there? Case studies will provide insight into how LATAM consumers are using and purchasing on mobile and what drives success.

An essential session if you are considering monetizing your content and services in Latin America.

www.m-e-f.org

Open Mobile Solutions Developer Pitch Sessions

Thursday, October 7 11:00 AM – 5:00 PM Room 2020

OPEN Mobile Solutions

OPEN TO ALL REGISTERED CTIA ATTENDEES!

Open Mobile Solutions—the B2B marketplace for the mobile application lifecycle, presents three valuable, action-packed pitch sessions designed for mobile app developers. Each 90-minute session showcases selected companies with mobile app related businesses/products and challenges them to present their big idea to a distinguished panel of mobile industry experts. The result: REAL, MEANINGFUL, AND VALUABLE FEEDBACK on their products. This is the opportunity to gain valuable insights and knowledge from experienced industry veterans.

Gaining Distribution:

Thursday, October 7
11:00 AM – 12:30 PM
Presenters will connect with a panel of experts representing key mobile app distribution channels.

Key Questions:
Are you wondering what platforms to target? What about feature phones vs. smartphones? How do you build an effective distribution portfolio leveraging carrier, OEM, aggregator and appstore distribution channels? How do you ensure that your application gets traffic once your application has been submitted and approved? What makes a successful mobile application?

Monetization:

Thursday, October 7
1:00 PM – 2:30 PM
Presenters will interact with a panel of key decision makers in the mobile advertising space—agencies, brands and networks.

Key Questions:
Are you wondering whether to make mobile advertising part of your monetization strategy? Do you have questions about how you make sure your product will be appealing to ad networks, ad buyers or ad agencies? What key attributes are advertising buyers looking for as they grow their mobile advertising spend? How do you ensure that your ad real-estate commands a premium? How do you effectively use demographic, location, context and usage data to more effectively target ads to your users?

Raising Money:

Thursday, October 7
3:00 PM – 4:30 PM
Presenters will pitch their product to a panel of the best minds in mobile venture capital, angel investors and successful entrepreneurs.

Key Questions:
Are you wondering if your business plan has what it takes to be attractive to investors? What key attributes are VCs and investors looking for in a mobile app related business? Where are the opportunities in mobile apps? What makes a successful mobile application?

The Producers Guild of America - New Media Council Presents: "Mobile Content In Motion"

Thursday, October 7 3:00 PM – 9:00 PM Room 2005

PGA Producers Guild of America New Media Council

OPEN TO ALL REGISTERED CTIA ATTENDEES!

3:00 PM – 4:00 PM

Adventures in Storytelling: Augmented Reality.

AR is rapidly becoming a buzzword but what exactly is it? Augmented reality is establishing itself in marketing and advertising by bringing billboards and consumer packaging to 3D life. In the world of mobile it's transforming phones and tablets into gateways for new forms of interactive and participatory content. What does AR mean for storytellers and producers of traditional media? A panel of pioneers will map out the present and multi-dimension future of Augmented Reality.

4:00 PM – 5:00 PM

Conversations in Content (20 minute moderated discussions)

- The Producer in Mobile
- The Branded Content Creator / Marketer
- The Mobile Enabler / Technologist

5:00 PM – 6:00 PM

Collaborations in Content

A coming out event for the PGA-NMC where CTIA attendees will be able to discuss content creation and production in informal discussion groups led by PGA members.

- Mobile video
- Mobile animation
- Mobile gaming
- Mobile enabling

7:00 PM – 9:00 PM

PGA Executive Networking Event

Mobile Digital Television: Live, Local TV Keeps Viewers Glued to Programming

Thursday, October 7 10:30 AM –12:30 PM Innovations Stage, Level 2

OMVC
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Is Mobile Television dead? Not if you ask more than 400 viewers who got a first-hand chance to check out Mobile Digital TV in Washington, D.C. this past summer! This special session will update attendees on a Consumer Showcase of Mobile DTV during the summer of 2010 that put specially-equipped handsets, netbooks, and DVD players in the hands of consumers in the Nation's capital. Fresh from the Washington Showcase, find out what consumers think of this new and different local TV service that brings the latest local news, weather, traffic straight to a portable device.

Broadcast live from local TV stations, Mobile DTV is now available from more than 40 local broadcasters. Hundreds more stations are expected to do a modest upgrade to turn on mobile digital broadcasting. Mobile DTV is received from over-the-air broadcast TV transmissions and it will not burden the carrier's network with video feeds.

At this special session for CTIA ENTERPRISE & APPLICATIONS 2010™ show attendees, you'll hear results from real viewers as tabulated by Rentrak and Harris Interactive. Learn why manufacturers like LG Electronics are bullish on Mobile DTV technology. And get ahead of the latest trend from local TV broadcast stations who are adding mobility to their transmission systems.

Android Bootcamp – Catching the smartphone booming!

Thursday, October 7 11:00 AM – 5:00 PM Room 2007
Friday, October 8 11:00 AM – 3:00 PM Room 2007

Silicon Valley Android Developers

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A two-day of valuable technical information exchange, which includes personalized direct and interactive access to Android experts, solutions leads, and partners from around the world.

BootCamp focuses on 101-level content and provides an overview of diference aspects of Android platform. There'll be tutorials, community-led discussions, and time to meet new Android folks all over the world.

We will discuss the following subjects:

- Handset manufacture's prospect
- Android in international market
- Android App Discovery, monetization
- Android in enterprise on cloud
- Android startups showcase
- Android App Demo, showcase
- Android VS. iOS (iPad), Chrome
- The Operator Prospect
- Embedded Android, GoogleTV

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WCA Presents: What's Hot about LBS?

Friday, October 8 11:00 AM – 12:30 PM Room 2018

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WIRELESS COMMUNICATIONS ALLIANCE

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Location based services (LBS) is a hot area in wireless, with a myriad of applications across different markets. This session will cover how LBS is a shape shifter for both enterprise and consumers and cover trends beyond 2010. Wireless Communication Alliance (WCA) is a non-profit business league dedicated to providing education, connection and community for those involved with wireless technology.

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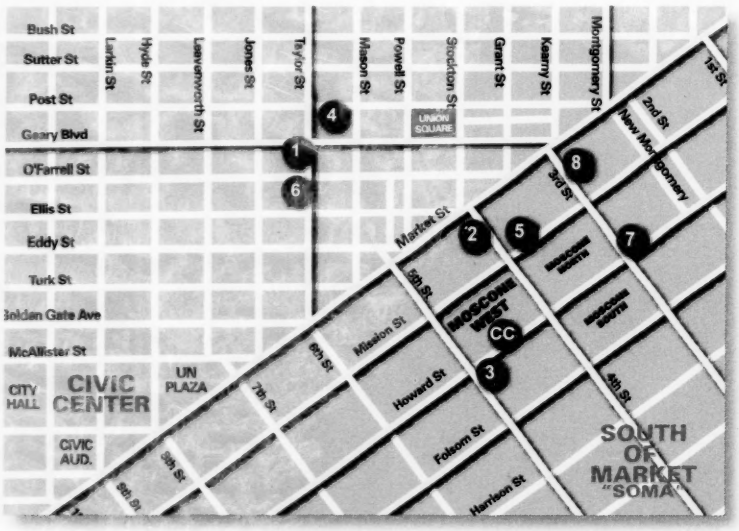

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and codes and other information into applications, "we can complete 70% of information that customers would otherwise have to key in. After that, all they have to do is validate the information and provide a digital signature, which is a big efficiency," he notes. "We're looking for internal efficiencies, but we also have to look at how to make our customers more efficient."

Similarly, Jeffrey Pattison, CIO at Inttra Inc., a Parsippany, N.J., company that provides e-commerce systems to the ocean freight industry, says, "We're trying to keep service levels up and keep costs as low as possible." One way to do that is to build more rules-based technology into customer-facing systems, which can then be customized by individual users to streamline their own operations.

"If we can run and grow more efficiently, we can free up more dollars to do R&D and innovative work," Pattison says.

In the New York State Office of Temporary and Disability Assistance, CIO Daniel Chan's biggest project for 2011 is called Functional Roadmap. The initiative involves working with an outside consulting firm to review just about all of the organization's business processes and then re-engineer them, automating wherever possible.

"Right now, we have 27 different programs that our clients may be eligible for, and each program is administered very differently. We're looking to consolidate to one or two processes from 27 different ways of doing things," Chan says. "Ten [percent] to 20% improvement is not acceptable. We're looking for multipliers of five or 10."

Running for Cloud Cover

Chan is also looking outside of his IT organization for solutions. "I think we spend entirely too much time tinkering with hardware," he says. "Over time, we can outsource most of our IT infrastructure. Instead of buying and building and managing servers, potentially we could engage a cloud provider and rent capacity. We are experimenting in-house with cloud, but there are still a lot of security-related concerns."

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>
> **ADAM NOBLE,** CIO, GAF MATERIALS CORP.

Haggen Inc., a 32-store chain of supermarkets in the Pacific Northwest, has already extensively consolidated its data center operations by virtualizing servers. "Now we're looking at storage rationalization and optimization," says CIO Harrison Lewis. "Before, we might just acquire more storage, but now we're looking at Tier 2 and Tier 3 data and moving it off to a private cloud."

A recent internal study showed that 49% of data that Haggen had been storing hadn't been accessed in two years. This has prompted a more rigorous review of all IT assets, with an eye toward distinguishing exactly what offers a competitive advantage and should be kept in-house and what should be outsourced.

"If it's not an area where we need to do a great deal of customization, software-as-a-service makes sense," Lewis says. In 2011, Haggen will be evaluating other SaaS options, including Google's suite of productivity applications. "From everything I've seen so far, it can make sense for us," notes Lewis.

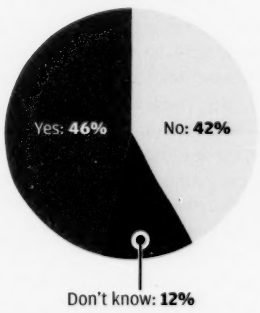
The bottom line, says Forrester Research analyst Bobby Cameron, is that companies will focus on continuing to drive down costs throughout 2011.

"As the IT organization focuses more on process, they're also consolidating IT, moving to shared services, and there is a huge acceleration in their ability to automate services," he says. "The whole concept of preprovisioned environments — with cloud and virtualization — takes automation to the nth degree.

"All of these accelerants are going to continue to drive down the cost of delivering IT," adds Cameron, not only in 2011, but for the foreseeable future. ◆

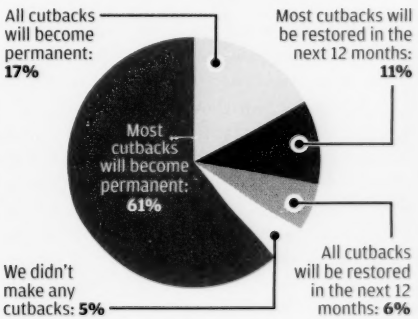
SPENDING SLOWDOWN

Is your organization planning any major upgrades or purchases in the next 12 months?



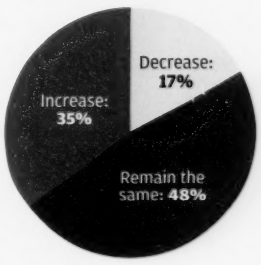
CONCRETE CUTS

What action will your organization take when revisiting any recent spending decisions?


All cutbacks will become permanent: 17%
Most cutbacks will be restored in the next 12 months: 11%
Most cutbacks will become permanent: 61%
We didn't make any cutbacks: 5%
All cutbacks will be restored in the next 12 months: 6%

NO-BUDGE BUDGETS

What changes do you expect in your organization's IT budget in the next 12 months?

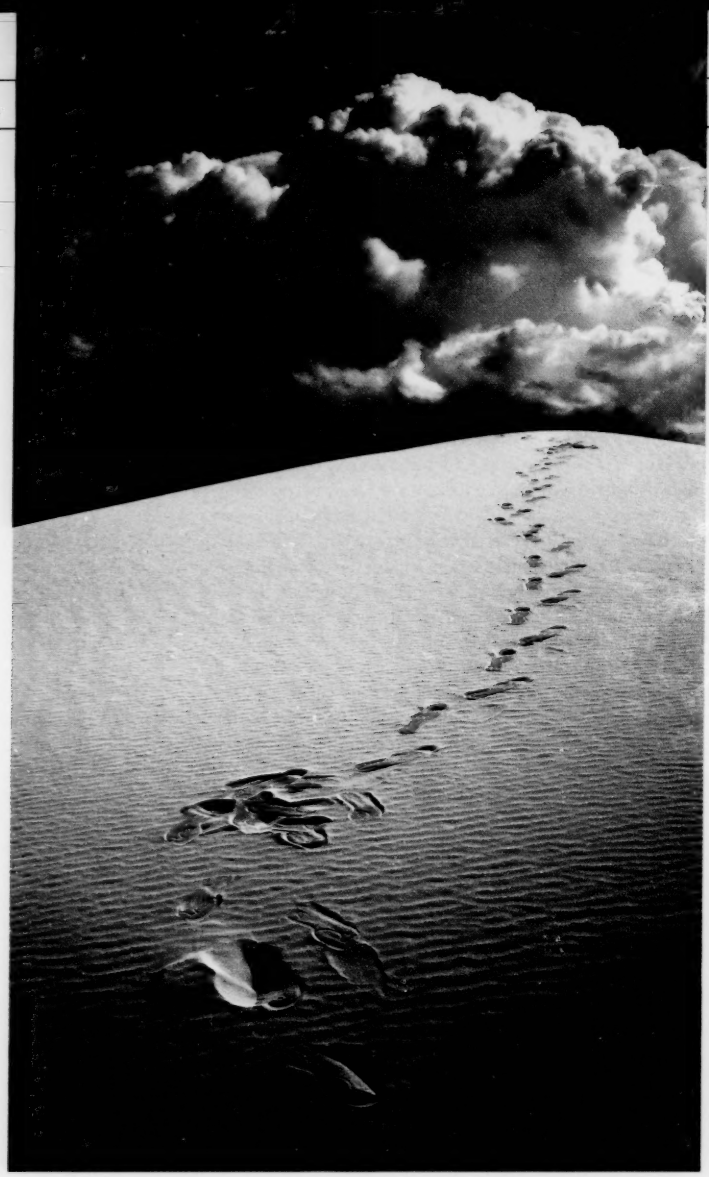


SOURCE: EXCLUSIVE *COMPUTERWORLD* SURVEY OF 209 IT PROFESSIONALS, JUNE/JULY 2010

High-Pressure Clouds

IT leaders are being urged to use **cloud computing** to lower costs in the data center. But is **speed** the real payoff?

BY ROBERT L. MITCHELL



IN THE TIME IT TAKES to get a cup of coffee, any one of the hundreds of engineers and developers at mobile computing chip-maker Qualcomm Inc. can provision himself a new server — one that's fully configured with compute, storage, networking, middleware and other resources. "You can get something provisioned within 15 minutes," says Matthew Clark, senior director of IT.

The San Diego-based company's self-service infrastructure, dubbed "AutoZone," includes all the hallmarks of a private cloud: a self-service portal with a menu of standardized services that users can choose; a virtualized infrastructure built using standardized suites of hardware and software; fully automated provisioning and deprovisioning; and the ability for IT to meter and allocate costs from the division level down to the individual department, application or user.

But don't ask Clark to call it a private cloud.

"We're getting close to a cloud, but I would call our implementation a cross-platform, automated virtualized environment," he says. His reticence is understandable because, as he points out, everyone seems to have a different definition of cloud computing. Clark's is very simple, if broad: "Cloud is efficient use of resources across your infrastructure, which can also be external services."

James Staten, an analyst at Forrester Research Inc., says Qualcomm is on the leading edge. No matter how Clark defines cloud computing, Staten says, "Qualcomm is a lot further along than most companies are."

Clark's peers are watching with great interest. Private clouds are rapidly becoming a priority for corporate IT heading into 2011. The core elements — on-premises virtualization, standardized infrastructure and service offerings, and automated provisioning — can deliver cost

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efficiencies and reduce administrative overhead. But the biggest driver by far is time to market, IT executives say. "We look at the benefit as quicker time to onboard applications, not cost savings. It's all about speed of deployment," says Norm Fjeldheim, Qualcomm's CIO.

There's another motivating factor at work as well, says Staten: potential competition from public cloud offerings, which IT's customers are increasingly using instead of in-house systems. "There's this fear that the public cloud will make IT irrelevant," Staten says, and many IT organizations are feeling pressure to have an internal "cloud answer" for the business side as soon as possible.

With all of the hype about cloud, it's important to keep in mind that, unlike some public cloud services that promise instant gratification, private cloud is an infrastructure play that represents a long-term payback. "It's not something you drop in today and immediately see a 50% return on investment," says Mitch Daniels, technical director at integrator ManTech International Corp. "The expectations-setting really needs to be addressed upfront, especially with management."

Defining Your Cloud

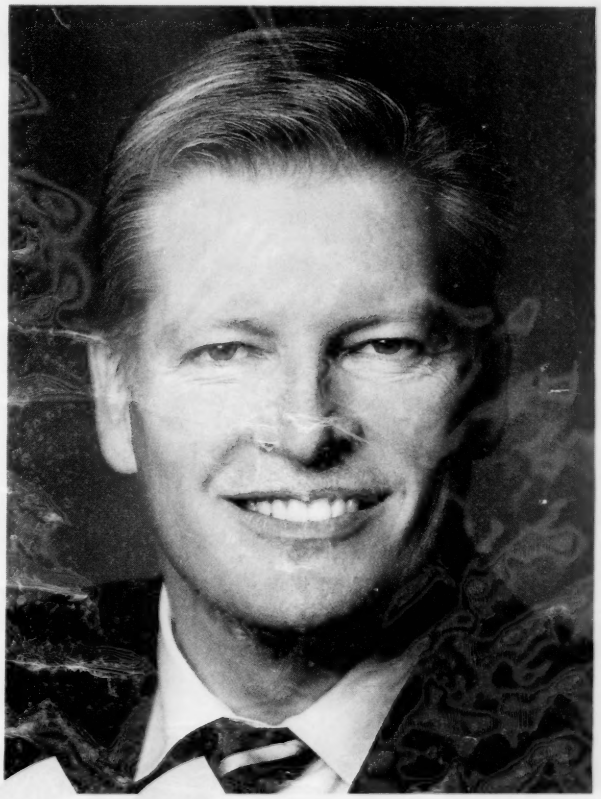
Fjeldheim defines cloud as "a complete abstraction of the hardware away from the applications that run on them." What Qualcomm has done isn't a cloud, he says, because it has virtualized classes of hardware, creating virtual infrastructure silos for Windows, Linux and Solaris environments. "We can't run an application on any piece of hardware we have," he says.

Also, Qualcomm's virtual infrastructure can't yet scale to support application workloads dynamically — something Fjeldheim sees as a key attribute of an internal, private cloud. "We don't have the ability for the virtual infrastructure to automatically provide additional infrastructure to an application that needs it, and then take it away when it doesn't," he says.

In addition to the core attributes of virtualization, standardization and automation, there's another important element in a private cloud architecture: multitenancy. Cloud-based services must be shared across all of the organization's departments and business units in order to pay off. "The economies only work when it's shared," says Staten. And that means business users must be willing to accept a limited set of standardized service offerings — and fewer customizations.

In other cases, the goal is to have not just the virtualized infrastructure, but everything up through the application layer become a set of standardized, shared services that all aspects of the business will share — something that Fjeldheim says his company is doing now for developers and engineers. Finally, says Staten, a private cloud should include the ability to track service usage and charge users for the consumption of cloud-based services.

Qualcomm isn't the only company experimenting with cloud. Many IT shops are starting pilots using one of these options: software-based architectures, such as the



We look at the benefit as quicker time to onboard applications, not cost savings. It's all about speed of deployment.

NORM FJELDHEIM, CIO, QUALCOMM INC.

open-source OpenStack promoted by RackSpace, NASA and Eucalyptus Systems; or more proprietary, "cloud in a box" setups that tightly couple the software and hardware, such as IBM's CloudBurst or Hewlett-Packard's BladeSystem Matrix "converged infrastructure."

Cloud-in-a-box products typically include a self-service portal, a cost allocation engine and all of the automation requirements for a defined menu of configurations, from the application, underlying databases and other middleware to virtual infrastructure and associated resources that will be assigned. These products enforce a degree of standardization right out of the gate and are a good way to get your feet wet, says Staten.

Rather than choosing one approach, Qualcomm has gone down both roads. "We went with a mixture of OpenStack and cloud-in-a-box solutions," says Clark. On

Continued on page 28

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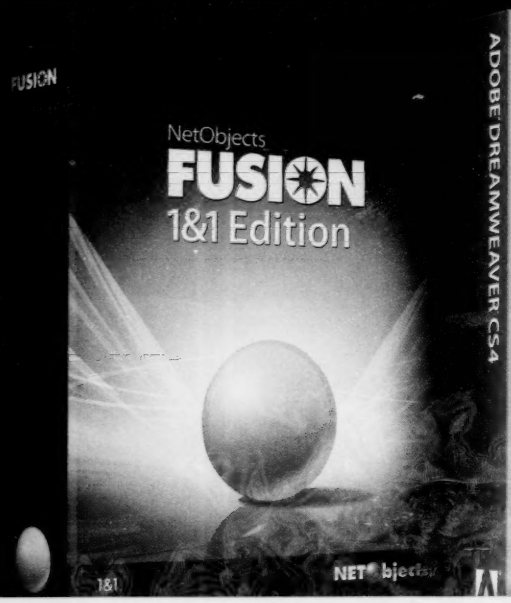

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the open end, Qualcomm uses Eucalyptus as its back end, along with VMware, Computer Associates' Automation Point tools, and products from rPath. The company is also working under nondisclosure with a vendor that's developing a cloud-in-a-box system.

Roswell Park Cancer Institute in Buffalo, N.Y., went for a boxed solution, deploying HP's BladeSystem Matrix in June in an effort to automate provisioning. The 11-blade chassis, which is still being configured, will eventually support 100 existing virtual servers, while another 100 new virtual servers will be built from a standardized set of templates, says Tom Vaughan, director of IT infrastructure. He sees continued work to conform with ITIL standards for IT service and change management, and the development of a standard service catalog, as key to a successful rollout, since cloud automation must be built upon a set of standardized processes.

Going Public: The Hybrid Cloud

Private clouds aren't necessarily hosted on-premises. There are hosted private cloud services from third-party providers that manage dedicated cloud infrastructures for their customers at off-site locations. An advantage of such arrangements is that the service providers can offer "cloud bursting" — the rapid addition of compute capacity from the public, multitenant cloud to handle temporary periods of heavy loads. But IT executives remain cautious about such setups because they have concerns about security and control; they're also leery of service-level agreements that seem better suited to small businesses.

"Security is a big, big deal for us. And not just security, but the perception of it," says Fjeldheim.

Wake Technical Community College in Raleigh, N.C., built a different kind of hybrid. The school is part of a consortium that developed a hosted private cloud that serves as a virtual computer lab (VCL) for students. The VMware-based system, built on IBM BladeServers by the Microelectronics Center at North Carolina State University, automatically provisions a virtual machine when a student logs in. Each image lasts for up to eight hours before it's automatically deprovisioned.

The VCL system eliminated to the need to open a new 50-seat lab, saving $50,000. But CIO Darryl McGraw says the school did run into one issue with a private cloud hosted by a third party. The fall semester starts earlier at Wake Technical College than at North Carolina State, and just as classes started at the former, administrators for the VCL took down the servers for maintenance. "The concept of multiple tenants on the same hardware can be problematic," McGraw says. He has also limited the cloud to student labs, as opposed to, say, the ERP system. "The worst that can happen is that someone gets their homework hacked into," he says. Overall, however, he considers the VCL to be a success, and he plans to push 137 physical computer labs into the VCL cloud over the next five years.

Using commercially hosted private clouds also presents contractual challenges. The CIO at one Fortune 500 company, who is currently negotiating with a major cloud service provider, says it's not always clear who's responsible when things don't work — or how the problem will be resolved. Providers expect to be able to change terms and conditions in contracts at a moment's notice, he complains. And he says that the service-level agreements he's seen are totally inadequate. "They want to limit their liability so greatly that — why bother?" he asks, adding, "If I offered those types of SLAs to the business, I'd be out of a job." The CIO, who asked not to be named because he's still in discussions with the vendor, says that in many cases, such contracts simply aren't designed for enterprise-class, mission-critical applications. The negotiations with vendors so far, he says, have been "burdensome."

The Caveats

But the need for rigid standardization of processes, services and infrastructure that underlie the cloud may be the biggest nut to crack in the year ahead. Problems come when IT — or its customers — begin customizing the standardized catalog of services because they don't like the predefined choices.

"For a private cloud to work, the IT shop has to deliver highly repeatable, consistent services with minimal or no customization," says Nick Van der Zweep, director of business strategy for industry standard servers and software at HP. For example, HP offers just three configuration templates for hosting an Oracle RAC database in the cloud: small,

Continued on page 30

HOT AND COLD

Cloud computing was ranked as the No. 1 **most overhyped** technology but was also named the No. 2 technology with the **most promise** for 2011.

Technology most important to your organization in the next 12 months:

1. Virtualization
2. Cloud computing

SOURCE: COMPUTERWORLD'S EXCLUSIVE FORECAST SURVEY OF 209 IT PROFESSIONALS, JUNE/JULY 2010

Key attributes of a private cloud:

- Virtualization
- Highly standardized infrastructure
- Automated provisioning
- User self-service
- Catalog of services
- Usage-based cost accounting and chargeback
- Dynamic resource scaling as application loads change

SOURCE: IT EXECUTIVE INTERVIEWS

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midsize and large. To host Exchange in the cloud, the administrator can choose only the number of users.

Straying from the path can lead down a slippery slope, since without a finite, standardized services catalog, the benefits of the system are greatly reduced. "All these things I change turn off the 'cloudiness' of it," Staten says. The only way to succeed, he argues, is to make it more costly for users to go outside of the standard offerings. Users who follow the rules get a system in 15 minutes and a neatly packaged services-based chargeback model. Those who need a custom configuration must wait longer — and pay more. But he doesn't think the chargeback model will fly in many organizations, and he contends that this is what will hold up broader adoption of internal clouds. "We're confident that 95% of IT shops aren't ready for that," says Staten.

You get into this ugly business-process re-engineering that has to go on. You say you have to do it this way, and then you have a rift with the user community.

MITCH DANIELS, TECHNICAL DIRECTOR, MANTECH CORP.

Fjeldheim sees IT process standardization as a key to success. "We have a very standardized way of doing things, good automation and process control," he says, adding that the company recently earned the ISO 20000 IT service management and ISO 27000 IT security management systems certifications. But that doesn't necessarily mean you have to create different processes or tool sets for managing cloud and managing traditional infrastructures.

To Daniels at integrator ManTech, the key is to identify services that can be reused across the organization — and stick with them. The problem, he says, is that each user organization wants things done slightly differently.

"You get into this ugly business-process re-engineering that has to go on. You say you have to do it this way, and then you have a rift with the user community," he explains. Those who have gone down this route with service-oriented architectures will have a leg up with internal clouds, he contends. Others, he says, may not appreciate the investment they'll have to make upfront to take full advantage of a private cloud architecture. "You've got to do your homework on the application side."

John Fiore, CIO at Bank of New York Mellon, worries about vendor lock-in with cloud-in-a-box offerings as he ponders choices for a pilot project. "There really aren't any standards at this stage of the game. If you go down a certain path, that's yet another new architecture you're accepting — and what might be the life span of it?" He says he likes the idea of cloud-in-a-box offerings that bundle hardware and software into one neat package but adds, "We'd prefer not to have a tight coupling between the two. Until they evolve to a point where a loose coupling is achievable, there are definitely some business risks here."

Starting Slowly

As with early virtualization deployments, most private cloud pilots focus on relatively safe, internal IT functions, such as testing and development. Bank of New York Mellon, for example, plans to focus early cloud-automation efforts in the development and quality assurance areas. Wake Technical focused on student labs, where student homework is the only thing at risk.

At Roswell, Vaughan says his first test will be to allow the IT staff to automatically provision virtual machines for testing purposes, before moving on to the server team and application developers. "Instead of going through the paperwork of requesting that a server be built, they will be able do it themselves," he says. And as the center rolls out virtual desktop technology to its Citrix clients next year, Vaughan says the back-end servers will move into the cloud. "I'd like to push out as many services to people as we can," he adds.

That's the plan at Bank of New York Mellon as well. Fiore says the bank plans to aggressively explore hosting an internal cloud but will start in the development and testing area, where "a lot of firms are cutting their teeth." Like Fjeldheim, he says the goal is faster deployments. "Time to market is the thing our customers are demanding. Things like [the Troubled Asset Relief Program] require us to act quickly and with great agility," says Fiore.

Broader cloud deployments beyond testing and development are still at least three years off, Staten says. But a private cloud ultimately has the potential to take over large tracts of the data center, especially for Linux- and Windows-based applications with variable workload demands, such as in the areas of high-performance computing, and collaborative or Internet-based applications. Less suitable are workloads that are very stable, where the equipment is fully depreciated and where there are no requirements to upgrade in the near future.

Qualcomm is unlikely to migrate its ERP system to the cloud, because its resource needs are highly predictable. The benefit of the cloud lies in its ability to scale in an automated fashion, Clark says, "but with ERP, we know when we have to scale and we can scale it."

Nonetheless, more and more workloads are evolving in that direction. "Our portfolio of applications is gradually moving toward the commodity [servers]. As that happens, the appropriateness of cloud rises," says Pete Johnson, chief technology officer at Bank of New York Mellon. McGraw says the initial costs of setting up a private cloud at the college were high, but in the long term, "it's worth it." Vaughan is also bullish on the long-term role of a private cloud architecture. Some functions may never fit into a cloud architecture, but eventually, he says, "I think it will pretty much take over the data center." ◆

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- **Thule, Inc.**, Seymour, Connecticut

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Did you miss this year's call for nominations?

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The Ultimate Multitaskers

Help desks are now **juggling support** for the iPad, Windows 7 and a host of smartphones – **and they're watching for what's next.** BY MARY BRANDEL

THE WEEK BEFORE the 2010-11 school year began at Indiana University, Sue Workman, associate vice president for communication and support, was preparing for the onslaught — not just returning students, but their wireless devices, too. Workman expects an average of two Wi-Fi-enabled devices per student, be they smartphones, tablets, netbooks, laptops, gaming systems, e-readers, MP3 players "and who knows what else," she says. Thanks to a proliferation of devices with built-in Wi-Fi, Workman believes wireless growth will be exponential this year.

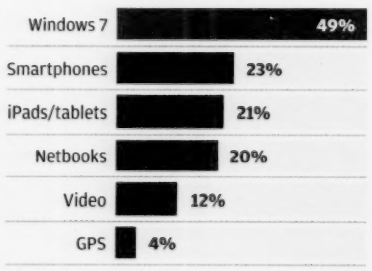
The explosion has caused big changes for IT at Indiana University, and there will be even more in the next year. "We've had to do some realignment to prioritize the technologies we want to support and then make sure we have the right resources allocated to them," she says. Last year, Workman's group saw an ever-increasing variety of netbooks and smartphones, including many more Apple iPhones, and university-developed iPhone applications. This year, IT is gearing up to support Windows 7 devices, Android applications, Microsoft Office 2010 Web Apps and new teaching models for Apple's iPad.

As IT shops across all industries begin allowing a wider variety of consumer technologies (see chart below), they must determine how their help desks will support all of those devices. Changes include more training (of both IT and business employees), increased staffing, self-help systems, social networking support forums, reorganized support organizations and tiered support strategies.

The challenge is heightened by the speed of innovation at the consumer level, where new products are likely to arrive every six to eight months, compared with every 12 to 18 months for corporate technology, says

MORE BALLS IN THE AIR

The technologies and devices that IT shops are supporting now that they weren't supporting last year:



SOURCE: *COMPUTERWORLD*'S EXCLUSIVE FORECAST SURVEY, 209 IT PROFESSIONALS, JUNE/JULY 2010

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Dan Quigley, vice president of IT at Aflac Inc.

Another factor is the variation among consumer devices that run the same operating system, says John Kresslein, CIO at the National Rural Electric Cooperative Association (NRECA). For example, while some Android smartphones can connect to Exchange through ActiveSync, others require third-party software, while still others don't enforce automated security rules such as password policies, he says.

Changes Ahead

An onslaught of new issues is forcing IT managers like Workman to reorganize their IT organizations to free up resources to support new computing models. In the coming year, she intends to start using desktop virtualization technology in an effort to manage PCs with fewer resources, and she's forging relationships with IT teams across the university to build a unified community that can leverage each group's expertise and resources.

At Texas Health Resources, the IT shop has had to change its approach to support, not just because users are continually bringing in the latest consumer devices, but specifically because physicians want to run electronic health records (EHR) systems on those devices. In the past 18 months, Texas Health changed its BlackBerry-only policy and now supports Windows and Android devices and iPhones as well. "We've seen a huge increase in demand among physicians for iPhone support," says CIO Ed Marx, and that means IT has to figure out how to handle connectivity, privacy, access and security for those devices.

With the advent of EHRs, Marx also expects to begin supporting more iPads and other tablet computers — including models that run Windows, and Hewlett-Packard's forthcoming tablet. "There's a huge desire to move away from laptops on carts," he says.

To absorb the extra support requirements, Marx cross-trained support staffers, streamlined service desk processes using ITIL-type methodologies and implemented some automated processes. He also plans to increase staffing by 15% next year. Perhaps most important, when the organization's mobile strategy is being discussed, IT leaders are now involved in the talks to ensure that the department can provide support. "The service desk is becoming more and more strategic," Marx says.

At Booz Allen Hamilton Inc., interactive self-help and social networking forums have noticeably reduced the number of how-to calls to the help desk. That's a good thing, considering the number and variety of mobile systems the consulting firm now supports, thanks to its focus on giving employees the freedom to work from different locations. "We have devices to fit the preferred working style of most people," says CIO Frank Smith.

The past year has seen emerging roles for tablets, PDAs, netbooks and laptops, as well as a blending of PBXs, computers and cell phones to keep employees in closer contact, he says. Booz Allen also uses find-me/follow-me communications services, in addition to other location-independent services, such as Avaya Inc.'s Extension to Cellular, which transfers calls from office phones to mobile phones without interruption.

Next year, employees will likely increase their use of interpersonal videoconferencing systems, as well as the iPad and other tablets, especially those like Cisco's Cius, which integrates with the existing security infrastructure, says Smith. "A lot of this is evolving, but there's demand for a lightweight e-mail/Web browser tool, and I believe we'll see more applications for these devices at the enterprise level," he says.

For the support group, this has meant more training, more staff and "a deepening of competence in multiple disciplines through experience, exposure and trying to not roll out anything without knowing how we'll support it," Smith says. It has also meant a lot of employee education in the form of brown-bag lunch meetings, briefings, newsletters and webinars, aided by social networking forums where discussions can be continued.

We've had quite a year with these new technologies – dealing with expectations of users and allowing their secure use without compromising their functionality and flashiness.

DAN QUIGLEY, VICE PRESIDENT OF IT, AFLAC INC.

The bottom line is, keeping up with employee demand — and addressing the security and support implications of all the new devices — takes a lot of time. NRECA's Kresslein can attest to that. In the coming year, he plans to research antivirus software for smartphones and find the most secure way to deploy e-book readers.

So far, his group has looked at the iPad, which relies on Internet downloads, and the BeBook Neo, which uses supplemental memory. The latter "wouldn't touch the network, so the only security concern is the types of documents people are storing on the device," Kresslein says. He also devised a way for employees to safely use Skype, by connecting via a netbook that operates outside the corporate network.

Issues like this — multiplied — are influencing Kresslein to take measures such as limiting the Android devices IT supports to those that work well with ActiveSync. "We've had to prioritize more of our projects," he says. "Smartphones have taken more of a lead lately because consumers want them, but they take more time to make sure they're secure." ◆

Brandel *is a* Computerworld *contributing writer. Contact her at marybrandel@verizon.net.*

11 Hot Skills for 2011

IT hiring will pick up slightly next year, and **talented programmers and project managers** will be at the starting line.

BY STACY COLLETT

CHRISTMAS CAME IN MIDSUMMER for Nicole Thompson, IS director of applications at HealthAlliance of the Hudson Valley.

Thanks to a federal mandate to implement electronic health records (EHR) systems, she has the funds in her 2011 budget to hire 11 new employees for projects ranging from database analysis and design to wireless device implementation.

"I'm bringing people on staff now who have extreme database experience," says Thompson, who works at the health care network's Benedictine Hospital campus in New York. She also needs someone with systems analysis and design experience, as well as someone who can communicate with clinicians about their workflow and then adapt a vendor's software to fit the hospital's needs. "It's a very exciting time," she adds. "This is the first time in my entire IT career where I have been able to hire people. I'm loving this!"

After months of staff cuts or hiring freezes, many U.S. companies are planning to hire IT employees with highly valued skills. The percentage of respondents to *Computerworld*'s annual Forecast survey who said they plan to increase staff size in the next 12 months increased slightly, from 20% in last year's survey to 23% this year.

"We're talking about hiring. It's happening now," says Dave Willmer, executive director of IT staffing services firm Robert Half Technol-

Continued on page 36

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Continued from page 34

ogy and a *Computerworld.com* columnist. "Companies that cut staff or implemented hiring freezes are realizing they need employees now to help upgrade IT systems and prepare for potential growth."

What's more, IT managers are taking the opportunity to mold their departments into profit-making business units.

Computerworld's survey uncovered these 11 must-have skills.

1. Programming and Application Development

About 47% of the survey respondents who said they plan to hire IT professionals in the next year will be looking for people with programming or application development skills. Moreover, Monster.com reports that three quarters of 245 HR managers and recruiters it surveyed in May plan to hire IT staffers with applications expertise by the end of this year.

"Those skills are separate from enterprise business applications," says David Foote, CEO and chief research officer at Foote Partners LLC in Vero Beach, Fla. In this volatile market, companies need to quickly reposition, as well as use IT to grow the business through new products and innovation. So "RAD, rapid programming and agile programming seem to be coming back. Companies are starting to increase some of their pay [in these areas], which means they're looking for more capabilities in their companies," he says.

2. Project Management

Kathleen Kay has put project managers at the top of her 2011 hiring list at Comerica Bank. With some 140 IT projects on the schedule, she will need people to oversee Web and mobile initiatives, a treasury management product rollout and a legacy applications refresh, among other efforts.

The Dearborn, Mich.-based bank will fill those needs by hiring new people and retraining existing employees. "We are very passionate about investing in our people and making sure they stay up to speed on skills with emerging technologies," says Kay, senior vice president of business technology services.

People with project management skills will be sought by 43% of *Computerworld*'s survey respondents who plan to make new hires, and by more than half of those polled by Monster.com.

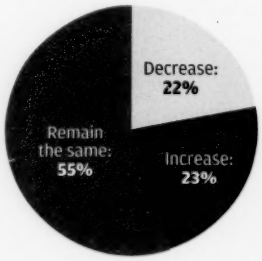
3. Help Desk/Technical Support

Only 20% of Microsoft customers had converted to Windows 7 as of July 2010, according to Microsoft. "That leaves 80%. They have to move over. It's not a matter of choice," Willmer says. That may be one reason why help desk and technical support skills will be high-priority in 2011 for 42% of survey-takers who are hiring.

What's more, major conversions like those in the health care arena, driven by the EHR mandate, require a lot of help desk support for users. "These aren't just people doing password resets. They're probably technically savvy as well as having that health care background," Willmer adds.

POCKETS OF HIRING

What changes do you expect in your IT employee head count in the next 12 months?



SOURCE: EXCLUSIVE *COMPUTERWORLD* SURVEY OF 209 IT PROFESSIONALS, JUNE/JULY 2010

4. Networking

Networking skills are in demand among 38% of *Computerworld* survey respondents who said they're hiring. And those jobs were identified as the most challenging to fill in a Robert Half Technology survey of 1,400 CIOs. "Networking is closely tied to virtualization," says Willmer. "Finding somebody with that virtualization experience and the ability to convert nonvirtual environments into virtual environments probably is the biggest reason" some networking skills are hard to find.

5. Security

"Security is the only area of certified IT skills that has never had a negative quarter throughout this entire recession," Foote says. "We've never had a three-month period with a loss or decline in premiums for these people." Demand is being driven by regulatory compliance needs and by customer demand for tools with built-in security features.

Valuable security skills include expertise in identity and access management, threat and vulnerability assessment, encryption, data loss prevention, incident analysis, governance, compliance and auditing, biometrics, Web content filtering, safeguards for voice-over-IP systems and e-discovery support for litigation.

6. Data Center

Of the *Computerworld* survey respondents who will be hiring in the next year, some 21% said that data center skills, including storage experience, will be in top demand.

"Storage is becoming more important as we go to network-attached storage [and storage-area networks]," says Suzanne Gordon, CIO at SAS Institute Inc. in Cary, N.C. Finding people with expertise in particular storage areas is important, she says, "but they should also be able to step back and look at it strategically: Are we putting the right things in the right places, and spending the right amount of money for safety and backup of the different types of data?"

7. Web 2.0

IT workers with next-generation Web skills will also be sought-after in 2011, according to 17% of *Computerworld*'s respondents who plan to add new staffers in the next year. Hot Web 2.0 skills include expertise in Adobe Flex, JavaScript, Adobe Flash, AJAX and JavaScript Object Notation. In the financial services industry, for example, "Web and mobile products are huge," says Comerica's Kay. "We have several projects ongoing that are geared around proving further Web and mobile functionality."

8. Telecommunications

At Palmetto Health in Columbia, S.C., Michelle Edwards wants to hire staff with skills in unified communications. The health care provider is seeking people who can design an infrastructure

and integrate various communications tools, including instant messaging, IP phones and remote access. "In a hospital, you have urgent needs for patient care, on-call needs and remote needs. We want to make sure we understand all those needs," as well as the security issues around those communications devices, says Edwards, senior vice president and CIO.

Some 16% of *Computerworld*'s survey-takers who plan to hire will be looking for telecommunications skills into 2011.

9. Business Intelligence

As data proliferates and IT departments look for ways to contribute to the company's profitability, business intelligence skills will be highly sought-after in 2011, according to 13% of survey respondents.

Palmetto Health is using an EHR system and staffers have been "very good about putting information in, but we haven't done as well taking that data and making it usable," Edwards says. "We're being forced to do a better job with presenting the information that we're capturing" and sharing it through statewide health information exchange networks, she adds.

10. Collaboration Architecture

Collaboration architecture expertise is high on Campbell Soup Co.'s list of hot skills, says Donna Braunschweig, senior director of IT, enterprise portfolio and strategy. The company constantly looks at "how we can help the end-user experience be better by understanding how things like portals, Web and audio can integrate, and what does that need to look like to be able to have better collaboration across the company?" she says. While most of Campbell's collaboration tools are hosted offerings from service providers, Braunschweig says she still needs employees who can manage those vendors and understand the technology.

11. Business Acumen and Communication Skills

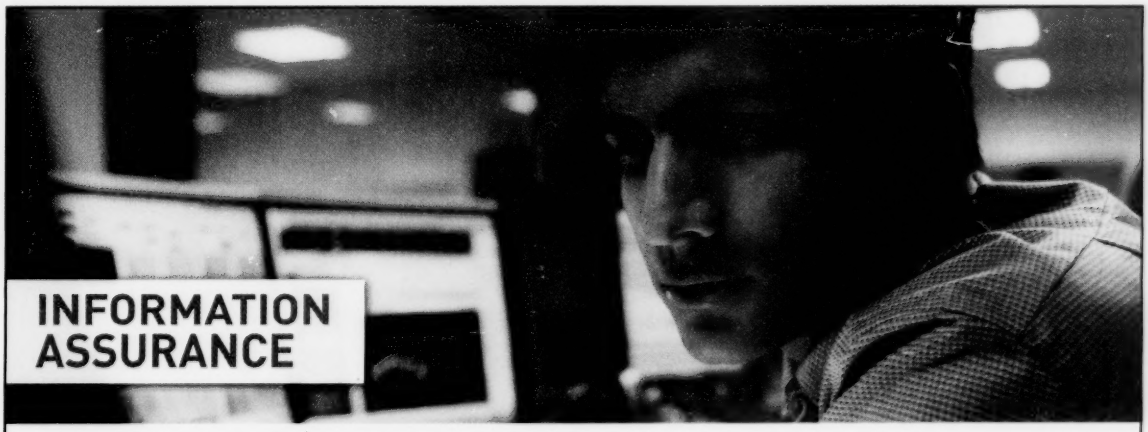
You won't find this in any IT job titles, but most companies in 2011 will seek IT employees who understand the business and can communicate technical concepts to business units and customers.

Campbell requires IT employees to have four types of competencies: business and financial acumen, functional depth, leadership skills and a global mind-set. "Sometimes people think of IT as just technical skills, and it's not," Braunschweig says.

At HealthAlliance, Thompson recruits IT staffers who can communicate well both orally and in writing. "I also want to have a reference of someone who knows how you speak about IT issues to people who are not computer-savvy," she adds.

Overall, the outlook for 2011 remains volatile, and IT groups will need workers whose skills can help them adapt to rapidly changing market conditions. But as IT units move from a support role to a profitability model, "now they are able to move more quickly," Foote says. "I don't think the [IT] world is ever going to return to what it was in 2008, but it's a very positive thing." ◆

Collett *is a* Computerworld *contributing writer. You can contact her at stcollett@aol.com.*



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THORNTON A. MAY

Your Marching Orders for Decade 2, Millennium 3

THE FIRST DECADE of the 21st century is drawing to a close. It started with the frenzy that was Y2K and concludes with the sizzle that is cloud. In between there were disasters — 9/11, Katrina, Enron — and victories. And ERP deployments, so many ERP deployments.

> Whining about the cold didn't help the dinosaurs. Complaining about change won't help you.

Just about every IT leader still standing in 2011 will agree that the first decade of the new millennium was tough, characterized by doing more with less, cage matches with software companies, and games of contract-chicken with outsourcers.

The good news is that if you survived, Decade 2 will be much more interesting and a bit less toxically underfunded. Leaders who emerge victorious need to excel at the four M's: mapping the future, mastering the "info-cosm," mobilizing the masses, and modernizing marketing.

Mapping the future: Everyone knows that the world five years from now is going to be very different from the world we live in today. Change is constant. Change is accelerating. Whining about the cold didn't help the dinosaurs. Complaining about change won't help you.

Christopher Columbus was successful because he had a map *and* was scary good at convincing people that the endpoint on that map was worth going to. If you are going to be successful in the next decade, you are going to have to "map up."

Mastering the "info-cosm." The future will be awash with information — 35 trillion gigabytes by 2020, if analyst estimates are to be believed. Former HP CEO Mark Hurd delightedly and repeatedly told senior executives that "in the next four years, there will be twice as much data as we have on the planet today."

PBS talk show host Charlie Rose recently interviewed Intel CEO Paul Otellini and asked, almost as an afterthought, what he thought would "go obsolete next." Without hesitation, Otellini responded, "Ignorance." In Decade 2, there is nothing we can't know.

IT leaders are perfectly situated to capitalize on the huge opportunity of converting those gigabytes of data (structured and unstructured) into actionable insights that propel the enterprise.

Mobilizing the masses: Clay Shirky, a professor at New York University, has coined one of the most important phrases for the decade to come: "cognitive surplus." Shirky contends that the world will be fundamentally changed by the constructive and coordinated reapplication of the leisure-time activities of the now-connected global population. In other words, Shirky wants to repurpose the 200 billion hours Americans spend watching TV.

This is crowdsourcing writ large — IT leaders need to figure out how to enable people outside their organizations to actively help them meet organizational objectives.

Modernizing marketing: Kaiser Permanente has personalized patient health reports to such a degree that doctors and patients can forecast the outcomes of therapies and choose accordingly.

Most high-end automobiles now feature climate controls that enable passengers and drivers to travel at different temperatures. Colleagues at the Stockholm School of Economics tell me that the most important "ism" in the world today is individualism.

The only way to delight the customer of the future is with world-class IT systems that enable us to manage markets of one.

If we map, master, mobilize and modernize, Decade 2 of Millennium 3 is going to be much better than the one we just finished. ◆

Thornton A. May is the author of *The New Know: Innovation Powered by Analytics* and executive director of the IT Leadership Academy at Florida State College at Jacksonville. You can contact him at thorntonamay@aol.com.

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SHARKTANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

HAL MAYFORTH

Manual Labor

Ambulance director pilot fish for this small town is also the only person in city hall who knows HTML. "So I was the one who usually edited the city Web site," fish says. "Then my boss had this great idea – Wordpress! All the city directors had a conference call with the guy who sold the city the Web site. Everyone was taking notes except for me, because I knew what he was explaining. I had questions the guy couldn't answer. Everyone stopped taking notes." Result: After the switch-over, fish's cell phone rings steadily with questions from other departments. Then he gets an idea: Write a manual, complete with pictures and instructions. He makes copies, distributes them and figures the problem is solved. Well, no – but the calls are shorter when fish just explains what page to read in the manual. "Finally I stopped answering my phone when they called," says fish. "After that, someone stopped me at work and said, 'I tried to get hold of you but couldn't, so I read the manual. You put a lot of time and effort into that, didn't you?' It took all I had not to strangle him."

Where Bugs Go

This pilot fish is in Canada, doing customer service for a U.S. technology company. "In customer service, we had no access to the source code if we found problems in the software," says fish. "All we could do was write up a report and submit it to the head office for fixing. We didn't like to go through the effort to do this – though we did it anyway – because experience had taught us that bug reports rarely got fixed in a timely manner, if at all. And if they did fix them, usually no one told us. After working in Canada for two years, there was an opening in the head office for which my talents were a perfect fit. I was offered the job and moved to the U.S. After a few months of training, they gave me a stack of bug reports to work on. The one on the top looked oddly familiar. It was a bug report I had submitted years before. I fixed the bug myself in short order – and then called my old office to tell them it was fixed."

It's Gonna Be a Lon-n-n-n-ng Job

Contract programmer pilot fish gets a job supporting a regional airline that has just gone bankrupt. "One of the first things they asked me to do was to generate a listing of every vendor they owed money to," fish reports. " 'Certainly,' I said. 'Would you like that in alphabetic or numeric order?' The manager jumped up from his chair, slammed his hand on the desk, turned red in the face and screamed at me: 'Don't talk to me in all that computer mumbo-jumbo crap! Just give me the report!' "

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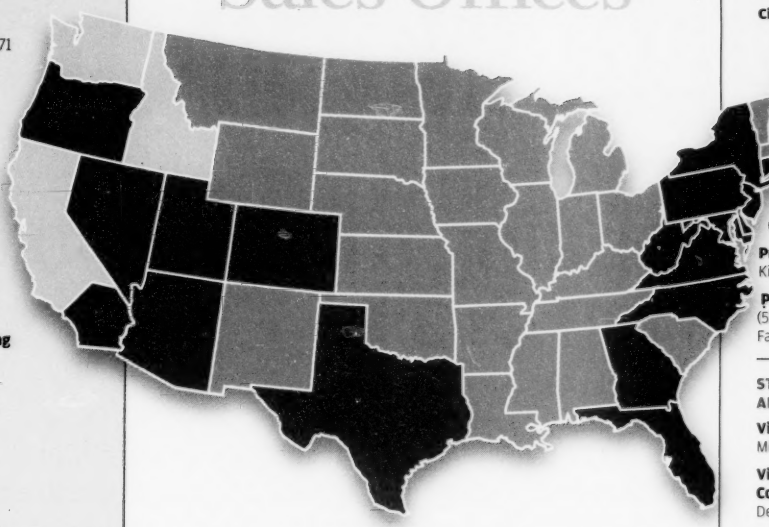

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OPINION

PAUL INGEVALDSON

Stopping the Technology Brain Drain

In high schools, we still teach the same math and science courses I took in the early '60s.

AS WE LOOK AHEAD TO 2011, it's a good time to think again about the potential shortage of qualified IT people due to excessive outsourcing of IT jobs to India, China and elsewhere. This situation is akin to the brain drain that occurred during World War II, when eminent scientists emigrated from Europe to the U.S.

The two main factors contributing to this developing shortage are a lack of focus on technology careers in the U.S., beginning in high school, and the uncertainties of the domestic job market.

First, let's look at education. Some people suggest that kids today aren't willing to take on the difficult subject matter that's contained in IT courses. Poppycock. Older generations always seem ready to label youngsters as lazy, self-absorbed and unwilling to work hard. Personally, I think every succeeding generation is smarter, more intelligent and more enthusiastic than the one before it. A better explanation is that our high schools have not kept pace with the emerging IT world.

This situation is caused by several factors. In math and science classrooms, we still teach biology, chemistry, physics, algebra, geometry and calculus as the core courses — the same courses I took in the early '60s. True, some schools make IT courses available, but they are electives. The renowned Illinois Mathematics and Science Academy, for example, offers six elective courses in IT-related subjects. Happily, it is considering making one IT semester mandatory. In St. Charles, Ill., the subject of IT courses is being discussed in the district's 21st-century skills project. But few others seem ready to take that step.

One thing behind the reluctance to change may be the testing that students undergo to enter college. Schools feel that they must prepare students to answer questions about the Pythagorean theorem or the atomic weight of sodium, and are confident that questions on efficient database design or Web site development won't show up.

And, of course, it is difficult to stay abreast of the ever-changing environment that is IT. Yesterday it was effective programming techniques, today it is ERP development, and tomorrow it will be cloud computing. The atomic weight of sodium is constant, but when it comes to IT, it's hard to keep courses relevant and textbooks up to date.

As for the domestic job market, I have heard even CIOs question whether they should encourage their children to pursue IT careers. My answer is that they should. All companies will need some type of technology practitioners in the future in order to harness the vast technology changes that will occur in the 21st century, which may rival those of the 20th century.

If you share my concern about the possibility that IT skills will leach out of the U.S., I suggest that you get active with your local high schools. This is where a lot of kids discover what they like to do. Let's push for IT courses to be mandatory in math and science. Let's encourage high schools to hire qualified teachers or seek IT practitioners to fill the void. Perhaps these same practitioners could serve on panels to advise curriculum committees on the subjects that should be taught. We could work with the schools to have guests from the industry speak to the students.

Our kids are aggressive users of technology. It would seem easy to get their attention when we talk about working in the field that creates that technology. Let's keep the brains here and active in our technology future. ◆

Paul M. Ingevaldson retired as CIO of Ace Hardware in 2004 after 40 years in the IT business. You can contact him at ingepi@aol.com or visit his Web site, PaulIngevaldson.com.

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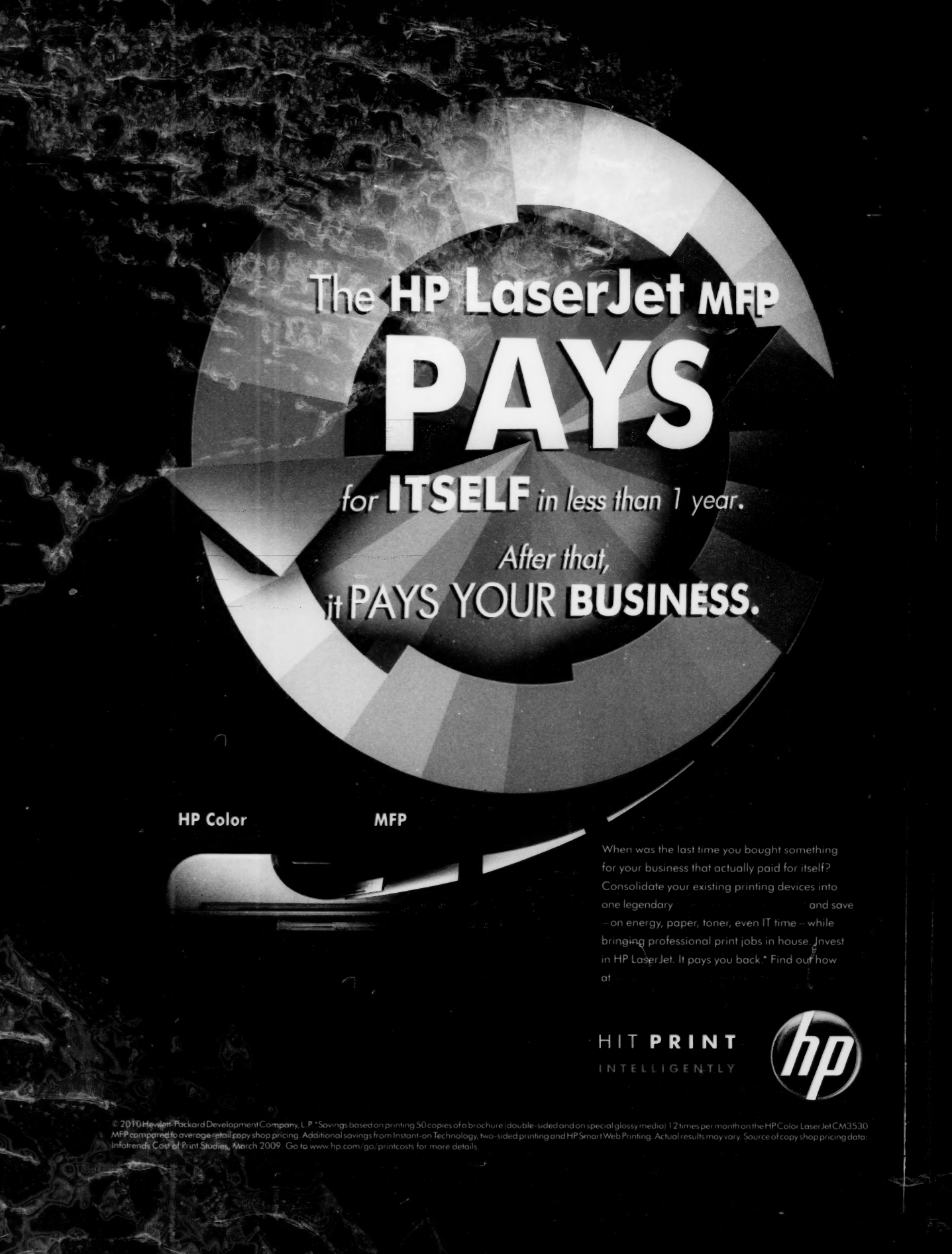
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